



Response to Public Comments

Fire Mountain Farms Biosolids Permitting Agreed Order

4/19/2021

"Ecology received comments on Fire Mountain Farm's proposal to land apply biosolids at 5 sites in Lewis County from October 15th 2020 to December 2nd 2020. This document contains the comments received and Ecology's response. Each comment is broken up by topic and are addressed individually"

"To request ADA accommodation for disabilities, or printed materials in a format for the visually impaired, contact Ecology at (360) 407-6831 or ecyadacoordinator@ecy.wa.gov. Persons with impaired hearing may call Washington Relay Service at 711. Persons with a speech disability may call TTY at 800-833-6384."

I-1: Linda Capps

Comment I-1-1

While the dept. of Ecology, feels that using bio-solids are safe, personally, I am uncomfortable of feeding my goats hay that was "fertilized", with bio-solids. In addition I do NOT wish to eat anything that was grown via bio-solids & I can't afford to buy organic as I am on a limited income, so it comes down to those who can least afford to avoid bio-solids, will be forced to possibly eat foods grown or food animals grazed on bio-solids feed, without their knowledge or consent. In addition to potential pathogens, there is also the issue of more than bio waste being used, people flush drugs, clean paint brushes in the sink, wash motor oil off their hand etc...so it can't be guaranteed that other substances wouldn't be in the bio-solids & contaminate the ground &/or ground water.

Response to I-1-1

The Department of Ecology (Ecology) acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

Comment I-1-2

And it can't be guaranteed that Fire Mountain Farm, won't start cutting corners again, putting the residents of Lewis county in danger.

Response to I-1-2

We appreciate the time you took to bringing your forward. Ecology's role is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if past violations have occurred. We do our due diligence and the purpose of public participation is to give folks the ability to correct mistakes and generally make us aware of things we might not otherwise be aware of.

I-2: Marie Panesko

Comment I-2-1

I have been concerned about the use of bio solids on soil designated for raising vegetables and other crops for human consumption since 1994 when I was looking for organic matter to spread on my fields. While bio solids come from poop, they are not "organic" as they contain heavy metals, traces of antibiotics and other pharmaceuticals, among other 'stuff' you'd never want your child to touch. Bio solids should be incinerated.

Response to I-2-1

Ecology acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

I-3: JOHN TURNER

Comment I-3-1

I owned a property and lived adjacent to the Fire Mountain Farm Burnt Ridge operation for several years. The property is downhill, south of the Fire Mountain property at 1058 Burnt Ridge Road. The house and well are less than fifty feet from the property line.

In October of 2005, a flood of thick black stinky runoff ran down the hill from the Fire Mountain property, across our lawn, garden, and over our well, 2-3 inches thick, 30 feet wide, and 150 feet long. I called Washington State Ecology to ask what to do, and they had not heard of the spill, it apparently was not reported by the owners. The owners came with water hoses and pushed the solids, to the degree they could, further down hill towards our pond.

Response to I-3-1

Thank you for bringing forward this information. Because of their past violation and comments like yours, several additional and more stringent requirements have been added to the agreed order requirements. This includes a 200 foot application buffer from the property mentioned in this comment, as well as the prohibition of liquid application of biosolids on fields the adjacent fields, BR-13 and BR-14.

Comment I-3-2

I am now alarmed, reading the restrictions that are placed after biosolids application on access to and use of the land, realizing we unwillingly became a biosolids application site. We were not warned of such restrictions, offered compensation, or even an apology.

Response to I-3-2

There are crop harvesting restrictions to protect human health following a Class B land application (40 CFR Part §503.32(b)(5)(iii)). Those restrictions do not last forever though. A very conservative harvest restriction was established to ensure that the hardiest pathogens that could potentially be in land applied biosolids would have adequate time to die-off. The pathogen of main concern to the EPA was the eggs laid by parasitic helminth worms, which are rarely detected in Class B biosolids in the United States. Root crops are the most likely to come in contact with helminth eggs and have the longest harvest restrictions. Since the biosolids remained on the soil surface for at least than four months on this property, the harvest waiting period is 20 months from the last time of application.

Comment I-3-3

In addition to having been subjected to a spill across our land, the odor from the applications, and the clouds of bugs were noxious. It does not smell like manure, but has a sort of ammonia/acidy/chemical unpleasant odor. Visitors to our house were often offended by the smell. In discussions with the owners of Fire Mountain Farm, they asserted that they were permitted to operate and that they have a right to use their property as they wish. They did not acknowledge or appear to care about the impact upon our property.

Response to I-3-3

I apologize that you had this experience. Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6 hours of application)
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-3-4

Due to the risks imposed on residences below the biosolids application site on Burnt Ridge, that site is not appropriate for such use and should not be permitted.

We learned the hard way that "poop" runs downhill. Past actions of the owners of Fire Mountain, their inability to operate safely, and their unneighborly actions, show that this biosolids operation is not suitable for the location and should not be permitted.

Response to I-3-4

Thank you for submitting your comment. Please review the response provided to your above comment I-3-1 for the additional requirements Ecology added to the agreed order based on the information you have provided.

I-4: David King

Comment I-4-1

Received the notice of Fire Mountain Farms, land application. We are on the "Newaukum Prairie". In looking and reading all parties impacted by this and seeing the print of all the wells, for some reason our well is not included in the picture, nor is it listed with the well reports that were included.

We have two (2) wells:

A hand dug well, which we abandoned when the new well was completed.

The new well: started 07/19/07 finished 07/23/07, Notice of Intent# W 236718, Unique Ecology Well Tag # AHG 761 Tax Parcel #018125004008, Done by Robrt Well Drill, 1090 HWY 603, Chehalis, WA 98532, Driller: Kenneth Whitham.

Not sure how this was over looked by our back fence line, this is where he is putting the biosolids. We would like to know who is taking responsibility if our well is contaminated. In the last 2 permits the Dept. of Ecology was supposed to test all the wells each year, that did not happen. Since this has been going on now for close to 20 years, I do feel the testing is in the best interest of all the well owners that are possibly affected. We do depend on that water and need it free of contamination. Feel free to contact me. Keep us on the notification list please.

Thank you,
David King

Response to I-4-1

Thank you for providing the information about your wells. As part of Fire Mountain Farms additional conditions, they are required to add your wells to their maps as well as the appropriate 100 foot buffers.

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy and Loyo-Rosales 2015).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels will help guard against groundwater pollution.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and limiting the application window to the drier parts of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water. Buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (chapter 173-308 Washington Administrative Code (WAC)),¹ Ecology has determined that the risk of groundwater contamination at these sites is very low and will not

¹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

require monitoring of offsite wells.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Brobst B. The Environmental Protection Agency. Biosolids Reference Sheet. EPA Region VIII.

I-5: Sandy Stroppa

Comment I-5-1

These photos were taken recently and clearly multiple tankers have been dumping on Burnt Ridge. Who knows what was being dumped.

I saw tankers both before and after the photos were taken. I don't leave the property very often, so the fact that I observed them on multiple occasions is significant. Some of the trucks were unmarked. Due to the location of the pond, it can not be viewed from the road so dumping wouldn't be able to be seen.

I would appreciate being kept informed.

Response to I-5-1

Thank you for submitting your concerns. The photos of yellow trucks submitted as a part of this comment were dated August 14, 2020. At that time, excess water was being removed from the lagoon holding delisted waste at the Burnt Ridge Unit and was sent back to Emerald Kalama Chemical for processing and disposal. Additionally, the removal of the solid fraction of the delisted waste was completed on December 28, 2020. It was sent to a solid waste landfill for disposal.

Comment I-5-2

We drink, exclusively from our nearby well. We are very concerned about water quality, especially in light of both Bob and Martha Thody being diagnosed with pancreatic cancer.

At the very least, neighbor's wells should be routinely tested, at no cost to owner, by an independent lab and the results should be sent to the well owner.

Our well is approximately 283 feet but water taken at about 250 feet.

Response to I-5-2

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy and Loyo-Rosales 2015).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only

when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels will help guard against groundwater pollution.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and limiting the application window to the drier parts of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water. Buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (chapter 173-308 WAC),² Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require monitoring of offsite wells.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Brobst B. The Environmental Protection Agency. Biosolids Reference Sheet. EPA Region VIII.

I-6: Jordan Cohen

Comment I-6-1

I currently own a small scale organic farm topographically below the proposed site where biosolids are to be applied (Burnt Ridge road). What potential impacts are assessed in applying biosolids at the site at Burnt Ridge? There are two critical waterways below the site (Lost Creek and the Newaukum River) and I am concerned about any potential negative impacts the dumping of biosolids will have on these neighboring waterways. I have been coordinating my farming activity for years (planting trees, establishing buffers) with the department of fish and wildlife regarding their work on the Chehalis River Basin and the health of salmon, lampreys and other wildlife; have you coordinated this dumping of biosolids with the work the department of fish and wildlife have been engaged in for the last several years? Dumping biosolids in an biologically diverse area that receives over 50 inches of rain seems potentially problematic.

Response to I-6-1

The following management practices have been added as additional and more stringent requirements for these sites to protect groundwater and surface waters from being impacted by biosolids land application. To protect our water resources the timeframe for when biosolids can be land applied has been reduced to eliminate the rainiest portions of the year when leaching and surface runoff are most likely to occur. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units

² <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. The MSA can be found at <https://www.wadairyplan.org/MSA>. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Comment I-6-2

After all, water flows downhill and it most certainly will carry any potentially hazardous elements with it affecting water quality issues for both humans and wildlife.

Response to I-6-2

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-6-3

And given Fire Mountain Farms poor track record in safely following DOE guidelines I would hope you would reconsider partnering with an entity that is historically unable to comply with your own regulations. Thank you for your time in reconsidering this matter.

Response to I-6-3

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed

order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

I-7: Bernard Quintana

Comment I-7-1

My family and I are very concerned about the potential health risks, and property value reduction that may come from the dumping of biosolids at 307 Big Hanaford Rd, Centralia WA. This location is only a mile away from our home on Wakefield and is also surrounded by neighboring farmland.

Response to I-7-1

Ecology acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

Comment I-7-2

The property in between this location and my home have cattle and I am worried about the impact it will have towards them when they graze.

Response to I-7-2

Federal regulations require a 30 day grazing restriction between when Class B biosolids are applied and when cattle can graze on agricultural lands. The 30-day period is a conservative site restriction designed to protect livestock and humans that are most likely to come into contact with biosolids. The requirement is listed in 40 CFR Part 503(b)(5) – Site Restrictions, (v) Animals shall not be grazed on the land for 30 days after application of sewage sludge. This requirement was established by the publication of 40 CFR Part 503 to the Federal Register on February 19, 1993.

The grazing restriction is designed to protect human health and the environment:

1. It is intended to limit the potential contact of livestock with freshly applied biosolids, where such livestock could act as potential vectors in transporting biosolids offsite.
2. Potential pathogens remaining in Class B biosolids are rapidly reduced after being applied to the field. Pathogens in the field applied biosolids are exposed to extremes in temperature, moisture, pH, UV radiation, and indigenous microflora.

3. The 30-day restriction allows time for the partitioning and eventual breakdown of many trace organic compounds within the soil system.

If you believe livestock have been allowed on a field before the 30 day grazing restriction expires, please contact the biosolids coordinator with a description and location of where this was observed.

Comment I-7-3

There are also streams and small lakes in the area as well as a pond on my property that has water all year long.

Response to I-7-3

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

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Comment I-7-4

Another issue I have with the strong smells is that it can have a negative impact on my wife due to her chronic sinusitis.

I hope my concerns are noticed and considered.

Thank you for your time!

Bernard Quintana

Response to I-7-4

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

I-8: Steven Ittner

Comment I-8-1

After reading the information regarding the proposed dumping of sewer sludge in our area I am apposed to and very concerned with impact not only to people but to animals and our water system.

Response to I-8-1

Ecology acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

Comment I-8-2

The dump area off of Big Hanaford Rd is right down the street from my home and I really don't want this possibly polluting the aquafer let alone the nearby streams and rivers, also the smell of this can't be a pleasant experience by any means.

Response to I-8-2

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:
<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site

Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-8-3

The dump area off of Big Hanaford Rd is right down the street from my home and I really don't want this possibly polluting the aquifer let alone the nearby streams and rivers, also the smell of this can't be a pleasant experience by any means.

Response to I-8-3

In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

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Comment I-8-4

Do you want to have to smell poop while sitting in your back yard trying to enjoy a day or evening. There are enough issues with our water as is and I really don't want to have another problem literally dumped on us. This can't really be a good thing if the land can't be used after dumping for any period of time.

Please don't dump the poop in our neighborhood...

Response to I-8-4

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

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- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

I-9: Heather Fegley

Comment I-9-1

My husband and I are the parents of two young sons, and we are the primary care givers of my mother who lives with us and who is being treated for a severe heart and lung condition.

We live on a small acreage family farm just North and down stream from FMF address Newaukum Prairie 349 SR 508 in Chehalis. Our only source of water is our well.

I am very concerned over the application of Fire Mountain Farms, Inc. for the use and storage of Class - B biosolids.

The Fire Mountain Farms is proposing to use Class - B Biosolids, however, the Washington State Department of Ecology states that Class - B Biosolids could still contain pathogens. Even though Ecology has issued a determination of nonsignificance under the State Environmental Act that would impose conditions on the company, and investigations for odor compliance, annual soil sampling and the company would have to prove adequate distance between biosolids and wells. We are still very concerned about the migration of ground water from the sites they propose to us, as we have a small fish baring creek that WDFW declared two years on the edge of our property that will flood on our property within a 100' radius of our drinking water well. Our children's health is very important to us since they play in the water from this creek and our livestock who drink the water from the creek is of upmost importance to us. We chose organic resources on our farm as not to harm our animals and children this would potentially contaminate our farm and eco-system.

We chose to move to this area because of the quality of life it offered us. We don't want to see our quality of life put in jeopardy.

This decision needs to be revoked for the safety of any and all neighbors young and old. Our health should be more important.

Response to I-9-1

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both

the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:

<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

I-10: Gary Reynolds

Comment I-10-1

I purchased a half a cow from Fire Mountain Farms in 2017 and if I'd have known they were using Biosolids (especially contaminated ones from the 2015 case of Kalama Chemical company) I'd have never purchased it. I feel I jeopardized my family members health from this - especially after learning the owners of FMF both have cancer. This has been alarming. I've read both sides of the argument and those that claim there are no problems with dumping sludge & contaminants simply do not, and cannot, be firmly grounded in any scientific knowledge we currently possess. Science use to say smoking was okay - until science proved it wasn't - and that's just one simple example of all the "whoops" in "science" that we later learn - through science - that our findings were premature and didn't look or see the foreseeable outcomes of those engaging in that habit. Same is true with Biosolids, and I for one don't want to be a giant dump for other counties - or anyone.

Response to I-10-1

Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products. All of these household products end up in our wastewater system after being flushed or drained from our personal residences.

If a chemical ends up in biosolids we know that it has properties that bind it to the solids (otherwise it would have remained with the liquids, i.e. wastewater effluent). This means that chemicals present in biosolids are not readily water-soluble and therefore, unlikely to leach after land application. Biosolids are land applied at agronomic rates based on the nutrient needs of the crop being grown. When applied to the soil, physical and chemical processes occurring within the soil break down a lot of chemicals. The U.S. Environmental Protection Agency (USEPA), other federal agencies, and universities have and continue to conduct research on the potential risks of trace chemicals in biosolids. Given the information currently available, Ecology continues to think Federal (40 CFR Part 503) and Washington (chapter 173-308 WAC)³ regulations for biosolids management protect human and environmental health.

³ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

Comment I-10-2

If this is still going to be considered I definitely would want Fire Mountain Farms to pay for soil, soil vapor and soil groundwater sampling at all critical areas prior to permitting process - with results publicized to all. And if contaminants are found then FMF is named the RP (responsible party) for remediation and clean up.

Response to I-10-2

Thank you for your comment. Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy and Loyo-Rosales 2015).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels will help guard against groundwater pollution.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and limiting the application window to the drier parts of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water. Buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC),³ Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require additional soil or groundwater sampling.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

I-11: Katherine Snyder

Comment I-11-1

I live directly across from the Lincoln Creek site. This is unacceptable. Not only will it impact the creek which backs up into our land, it will impact the soil quality. It will impact the air in the valley, therefore decreasing my home value and affecting my daily life. This area floods EVERY winter, which means the sludge will not stay in the area it was put. This will run off into the grazing land that surrounds it, impacting cattle and wells. Can you really allow a company to dump waste and hazardous materials knowing families and animals will be affected?

Response to I-11-1

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-11-2

As a doctor, I'd like to request a full breakdown of all materials that you'd like to approve dumping, their carcinogenic and mutagenic effects, and what the litigation plan will be from long term effects of this material being in our water and on the land. This is unacceptable.

Response to I-11-2

Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products. All of these household products end up in our wastewater system after being flushed or drained from our personal residences.

If a chemical ends up in biosolids we know that it has properties that bind it to the solids (otherwise it would have remained with the liquids, i.e. wastewater effluent). This means that chemicals present in biosolids are not readily water-soluble and therefore, unlikely to leach after land application. Biosolids are land applied at agronomic rates based on the nutrient needs of the crop being grown. When applied to the soil, physical and chemical processes occurring within the soil break down a lot of chemicals. The U.S. Environmental Protection Agency (USEPA), other federal agencies, and universities have and continue to conduct research on the potential risks of trace chemicals in biosolids. Given the information currently available, Ecology continues to think Federal (40 CFR Part 503) and Washington (chapter 173-308 WAC)⁴ regulations for biosolids management protect human and environmental health.

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

I-12: Patrick Rau

Comment I-12-1

Please do not allow this permit to go forward.

Please deny the application.

Fire Mountain Farms Biosolids has shown through past action that they are not trustworthy.

Response to I-12-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend

⁴ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

I-13: Tani Houk

Comment I-13-1

I live just down the road from this with my children. I do not believe this is in our best interest, to have a company spreading biosolids near our house. Particularly if we may be impacted during the rainy season with the flooding that occurs.

Response to I-13-1

Ecology acknowledges that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Ecology hears that you are not interested in having biosolids land applied near you. The Washington state legislature has declared in chapter 70A.226⁵ Revised Code of Washington (RCW) that properly managed biosolids are a valuable commodity and that a program be established to manage municipal sewage sludge. Ecology is in charge of managing the land application of biosolids in a responsible manner.

Comment I-13-2

I'm also concerned about the smell that would arise

Response to I-13-2

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-13-3

and our neighbors drinking water as we are all on wells.

Response to I-13-3

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both

⁵ <https://apps.leg.wa.gov/rcw/default.aspx?cite=70A.226>

the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:

<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-13-4

Given their history of illegal activity I highly recommend they are denied this permit.

Response to I-13-4

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

I-14: Sara Polmueller

Comment I-14-1

RE: Notice of Determination for Land Application of Biosolids

Posted: October 15, 2020

By: Ryan Thode

Fire Mountain Farms

349 SR 508

Chehalis, WA 98532

Dear Ms. Greenway:

I am writing you regarding the above-referenced pending permit for application of biosolid waste at five properties in Lewis County, and in particular, at Fire Mountain Farms 349 SR 508 in Chehalis.

Our property directly adjoins Fire Mountain Farms on SR 508 along our southern border. Two creeks on either side of our property are downstream of the pastures on SR 508 where the proposed biosolid waste would be applied. The biosolid waste runoff would most certainly travel via these creeks and rainwater through our property, spreading unwanted and potentially dangerous contaminants. Per DOE recommendations (pg 32), human traffic is forbidden for 30 days after application. One would logically conclude that the runoff would pose the same risk for us as it is conveyed from FMF via waterways. This is both unfair and unreasonable, as it is an unwanted risk with which we do not agree. In addition to concern for our own human safety, our small cow/calf herd and dog drink from the creek, and the cows graze on the grass near the creek. The health and safety of our livestock is especially important to us, and introducing pathogens and debris of human waste, even if so-called biologically refined, in the water they drink is untenable.

Response to I-14-1

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. Approval is not guaranteed.

Comment I-14-2

Furthermore, I personally saw for myself, after the last application of biosolids in Lewis County, remnants of tampons and condoms hanging on fences after the high water receded. It was very gross and disturbing.

Response to I-14-2

The presence of manufactured inert materials should be non-recognizable or minimal (less than 1% by volume of screened biosolids). All biosolids, prior to land application, are required to be screened through a device with a maximum opening of 3/8-inch. Many facilities are more restrictive and screen to an even smaller opening than the required 3/8-inch. If recognizable, manufactured inert materials (such as condoms or tampons) are observed as part of a biosolids land application event, contact the biosolids coordinator immediately with a description and location of where the inert materials were observed.

Comment I-14-3

When we applied for the permit to build our home, we had a wetlands study done which determined we must build with setbacks to accommodate the two bordering creeks. During the rainy season, the water running through these creeks floods beyond their banks and may stand for several days at a time. We are very opposed to the having the proposed hazardous contaminates even temporarily, closer to our well and home.

Response to I-14-3

Ecology acknowledges that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Ecology hears that you are not interested in having biosolids land applied near you. The Washington state legislature has declared in chapter 70A.226 RCW⁶ that properly managed biosolids are a valuable commodity and that a program be established to manage municipal sewage sludge. Ecology is in charge of managing the land application of biosolids in a responsible manner.

Comment I-14-4

One final, and the most important objection to allowing the application of biosolids is that our grandchildren, and the neighbor's children and animals play in the western creek. We care very much about their health and welfare, and to allow this contamination would pose an unnecessary serious health hazard to them.

I sincerely hope these points will be considered in the permitting process, and that you will not allow Fire Mountain Farm to apply this toxic health-hazardous material to their property, which will affect our property, endanger us, our neighbors, children and animals, and infringe upon our right as property owners and tax paying citizens, to manage our property as we see fit.

Sincerely,

Sara Polmueller

⁶ <https://apps.leg.wa.gov/rcw/default.aspx?cite=70A.226>

Response to I-14-4

Ecology acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

I-15: Tammy Norskog**Comment I-15-1**

Nasty! I drive 508 daily & don't want to see or smell this! There's steams near by Newaukum River that will go into the streams & harm fish. Kill fish & plants! They need to build a sewage treatment plant!

Response to I-15-1

Your comment has been noted.

I-16: Toni Johnson**Comment I-16-1**

This will kill my dogs. All six of them. My dogs stay on my property which is next to where you are planning to put this so called sludge. Once you put that there they will go there and roll in it. Even if I kept them in the house for the 1 hour you say humans can't walk on it, once I let them out the smell would attract them and they would be rolling in it and eating it. I do not want this near my home where my hound dogs would smell this and die.

Response to I-16-1

Biosolids application is only allowed on permitted properties. There are grazing restrictions in place to protect human health and the environment. It is intended to limit the potential contact of livestock with freshly applied biosolids, where such livestock could act as potential vectors in transporting biosolids offsite. If your dogs are kept on your property, they will not come into contact with biosolids that have been land applied.

I-17: Jami Lund**Comment I-17-1**

Fire Mountain Farms Biosolids Permitting Agreed Order

I support the permit subject to the usual expectations.

I know that the state has applied many rigorous standards on waste treatment and further expectations on this kind of project. I trust those making those rules to have considered the science and even erred on the side of caution.

The reactions people are trying to buy with Facebook advertising are underinformed and using a blatant emotional appeal in spite of our state regulators and land users' well-established commitment to conservation and public health. It would be a disappointment if reactionary comments paid for with advertising were to thwart the science of regulation.

I live near Hanaford, have lived in Onalaska, and have family in Lincoln Creek. These are remote areas with vibrant ecosystems able to dilute and utilize the biosolids safely.

Response to I-17-1

Your comment has been noted. Thank you for participating in the public comment period.

I-18: Gavin Dinnel

Comment I-18-1

I would like to oppose the proposed permit to dump bio solids in the Lewis County areas. The residents of the Lincoln Creek valley are a close knit group. We barter, we help each other out and allowing this dumping of waste would be hazardous to all of us. The creek nearby, that floods every winter is a salmon bearing creek, what is the impact to the fish in those streams, as there would certainly be runoff?

Response to I-18-1

Ecology agrees that applying biosolids during the winter unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. Approval is not guaranteed.

Comment I-18-2

What about the cows in the adjacent grazing pastures? What about their health, and consequently, the health of the people that eat that meat? Many of which live in the valley of which this company wants to dump waste.

Response to I-18-2

Federal regulations require a 30 day grazing restriction between when Class B biosolids are applied and when cattle can graze on agricultural lands. The 30-day period is a conservative site restriction designed to protect livestock and humans that are most likely to come into contact with biosolids. The requirement is listed in 40 CFR Part 503(b)(5) – Site Restrictions, (v) Animals shall not be grazed on the land for 30 days after application of sewage sludge. This requirement was established by the publication of 40 CFR Part 503 to the Federal Register on

February 19, 1993.

The grazing restriction is designed to protect human health and the environment:

1. It is intended to limit the potential contact of livestock with freshly applied biosolids, where such livestock could act as potential vectors in transporting biosolids offsite.
2. Potential pathogens remaining in Class B biosolids are rapidly reduced after being applied to the field. Pathogens in the field applied biosolids are exposed to extremes in temperature, moisture, pH, UV radiation, and indigenous microflora.
3. The 30-day restriction allows time for the partitioning and eventual breakdown of many trace organic compounds within the soil system.

If you believe livestock have been allowed on a field before the 30 day grazing restriction expires, please contact the biosolids coordinator with a description and location of where this was observed.

Comment I-18-3

Furthermore, it's my understanding their previous permit was cancelled due to dumping illegal waste. Has mitigation been done in that area, was there litigation? An old adage may fit here, and that would be "fool me once, shame on you, fool me twice, shame on me". By approving this permit, we're putting ourselves in a position to be burned again by this company, and the risk does not outweigh the monetary benefits.

Sincerely,
Gavin Dinnel
Lincoln Creek Resident

Response to I-18-3

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements. This includes that land application of biosolids cannot begin at the Big Hanaford, Burnt Ridge and Newaukum Prairie units until all delisted Emerald Kalama Chemical (EKC) waste has been removed from this location and a clean closure approval has been issued by Ecology.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

I-19: Russell Richardson

Comment I-19-1

I strongly oppose fire mountain farm depositing biosolids on Lincoln creek the government has spent millions of dollars trying to filter water in this watershed for salmon and steelhead in the way of the CREP program and this company wants to spread contaminated biosolids, the stuff that's left from the sewer, on 269 acres that drain off in this watershed.

Response to I-19-1

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

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Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Comment I-19-2

This company should pay to clean up all the property of previously deposited sludge they have deposited in the past with included hazardous waste in them, are you truly considering letting this cheating polluter who duped you for 20 years do it again. If so I want your Job and the bribes you've taken No No No

Response to I-19-2

Your comment has been noted. Thank you for submitting.

I-20: Gail Jones

Comment I-20-1

I live only a couple miles from this proposed dump site. The Dept of Ecology asked permission to research freshwater clams in Lincoln Creek on our property recently. Was this because of this proposal? If you're having to research habitat in a nearby ecosystem, doesn't that tell you that this proposal is not ok? We are not allowed to pull downed timber out of Lincoln Creek as it upsets the Salmon habitat (even though not doing so causes flooding in our pastures, but we comply with the rules), but waste and sludge can be dumped near that same water ecosystem? That makes no sense to me. That seems more upsetting to an ecosystem. During the fall, Salmon run that creek, we see them every year. I strongly oppose the dumping near where I live. That is waste from those that don't even live near here, they should dispose of it near

where they live, or come up with better means of disposal than simply "out of sight out of mind, it's someone else's problem now" Is this money motivated? Because if our society starts discounting the well being of our planet in favor of monetary gains, then any conservation group is essentially a joke.

Response to I-20-1

Ecology researching freshwater clams on your property was not conducted by the Biosolids Management Program. If you provide additional information to the southwest biosolids coordinator, we can get you in contact with the division that conducted that research if you would like more information.

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

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Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

And last, there is not a requirement in the Biosolids Management Program that directs facilities on where they have to land apply their biosolids. Land application of biosolids is not "out of site, out of mind" though. It is a highly regulated activity where regulatory requirements must be met and crop nutrient requirements need to be assessed before land application can occur. Due to transportation costs, many treatment plants have their biosolids land applied near where they are produced.

I-21: Wendy Roberson

Comment I-21-1

First off neither I nor my neighbors were informed about the request to once again dump sludge on the Big Hanaford Rd, Centralia, WA site. Not until someone that is close to one of the other sites came and gave us copies of the Permitting form did my neighbors or I know about it. It is unconscionable that the DOE did not notify anyone in the surrounding neighborhood about this. I have lived my whole life in this valley and once before we were not notified about this until it was too late.

Response to I-21-1

Ecology is deeply committed to public involvement and we do our best within the limits of the law to ensure that permittees inform neighbors about upcoming actions. Public notice for the proposed biosolids land application site met the requirements of Chapter 173-308 WAC⁷ section 310 (13) of the Biosolids Management Rule. According to the rule, the proponent (Fire Mountain Farms) issued a notice in a newspaper of general circulation in Lewis County, where they propose to land apply class B biosolids. This notice was published in the Chronicle on October 15th, 2020. Public comments were accepted by Ecology for 55 days, instead of the minimum of 30 days, following the issuance of newspaper notice until December 2nd, 2020. Ecology also held a virtual public meeting to inform the public of the proposal, and to receive public testimonies on November 18th, 2020. Additionally, notices of the hearing and public comment period were mailed to about 86 interested people by Fire Mountain farms and email notices were sent to about 11 interested people by Ecology. Fire Mountain Farms posted the physical public notice at the proposed application sites for the same 55 day period. Under the law, it is Fire Mountain Farm's responsibility to conduct public notice and send notification to members of their interested parties list, but Ecology does provide oversight to that process. It is Ecology's responsibility to send notification to members of the interested parties list when a change has been made to a permittee's permit coverage.

As per the rule, anyone who submitted a comment during this public comment period has been added to Fire Mountain Farm's Lewis county interested parties list by Ecology staff. The interested parties list is maintained by the proponent as per the biosolids rule, Chapter 173-308-310 (13) (g) (vii).⁷ Everyone on Fire Mountain Farm's Lewis County interested party list will be notified when decisions or changes are made to the current proposal, as well as other changes to their permit occurring in Lewis county. We are very sorry to hear that you were not aware of actions and your ability to participate in the process and would appreciate any feedback on how we can better reach residents.

Comment I-21-2

My home is the closest to the field where once before this was allowed. My well is downstream within 100' of the field and only 28 feet deep. The water table is very shallow here, around 6 feet. But in the winter the field where they dump drains into my field and sometimes within 20 feet of my house and well. The trailer court to the right in the picture below also has a well. There are children living in this trailer court being exposed to those toxins. Children need to go outside and play safely. See photo: My address 275 Big Hanaford Rd. Where the red circle there was always an open sludge pond. You can still see the remains of where it was. Where the blue line there are drainage ditches that have been there for over 70 years or more. When it rains there is standing water in those ditches, with hard rain they run freely and during the winter rains it is usually about 5 to 8 feet deep in this ditches.

Response to I-21-2

Ecology acknowledges that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units

⁷ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-310>

- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Comment I-21-3

They would have the tanker trucks coming in after dark, at all hours of the night, so no one would realize they were dumping the sludge. Never would see them in the daylight hours. This is a two lane road with small shoulders and between the Steam Plant trucks and Sludge tankers it destroys the road in the winter and is unsafe for children and adults to cross for buses or mail.

Response to I-21-3

To reduce the impact to neighbors and prevent unapproved application of biosolids, Ecology has limited land spreading and incorporation activities at these sites to daylight hours, a half hour after sunrise to a half hour before sunset. Additionally, Fire Mountain Farms is required to notify Ecology before all biosolids land application activities occur.

The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

Comment I-21-4

We raise beef on our fields and used them for our families. There are wild ducks and geese that are in those fields then shit on our land and house as they pass over. If you let them dump here they are exposing us to diseases. Also I have seen up to 80 elk out in that field when the spring sun comes out. Once they stop dumping there, they immediately start putting cows on those fields to sell to the public for meat.

Response to I-21-4

Federal regulations require a 30 day grazing restriction between when Class B biosolids are applied and when cattle can graze on agricultural lands. The 30-day period is a conservative site restriction designed to protect livestock and humans that are most likely to come into contact with biosolids. The requirement is listed in 40 CFR Part 503(b)(5) – Site Restrictions, (v) Animals shall not be grazed on the land for 30 days after application of sewage sludge. This requirement was established by the publication of 40 CFR Part 503 to the Federal Register on

February 19, 1993.

The grazing restriction is designed to protect human health and the environment:

1. It is intended to limit the potential contact of livestock with freshly applied biosolids, where such livestock could act as potential vectors in transporting biosolids offsite.
2. Potential pathogens remaining in Class B biosolids are rapidly reduced after being applied to the field. Pathogens in the field applied biosolids are exposed to extremes in temperature, moisture, pH, UV radiation, and indigenous microflora.
3. The 30-day restriction allows time for the partitioning and eventual breakdown of many trace organic compounds within the soil system.

If you believe livestock have been allowed on a field before the 30 day grazing restriction expires, please contact the biosolids coordinator with a description and location of where this was observed.

Comment I-21-5

During the time they were dumping, the smells was so bad we could smell it in doors with all of the windows close. We couldn't go outside without gagging, no being in the yard, having a bar-b-que or having the windows open on hot days. Friends wouldn't come visit it was so bad, they made us prisoners in our own homes. This dumping will again make the value of my 5 acres of property almost worthless with the smell overpower everything with miles. I do not believe that Fire Mountain Farms should have access to using this farm land for sludge dumping. Thanks for your consideration. Sincerely, Wendy Roberson

Response to I-21-5

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).

- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

I-22: Morton Alexander

Comment I-22-1

This is a comment on how difficult it is to have any meaningful impact on Ecology policy:

From: Morton Alexander
 Sent: Wednesday, November 18, 2020 9:38 PM
 To: gres@ecy.wa.gov
 Subject: Belated comment for this evening's hearing

Ms. Greenway,

I was too shy to comment during the hearing, earlier. So, here it is:

We own land in Mill Canyon outside Davenport in Lincoln County, and have had our own battle with Ecology and Fire Mountain Farms a few years ago.

Our neighbor Garry Rosman had applied to have FMF sludge his wheat fields, one of which is steeply uphill and within sight from our spring. The natural spring feeds our home, our organic fruit orchard, and the neighbors who collect clean drinking water from it. We live in a community of many certified organic food producers. The canyon is subject to occasional floods and windstorms which carry dirt from the farms up top down to us.

Garry's fields to be sludged included what were classified on soil maps published by the USDA's Natural Resource Conservation Service (formerly known as the Soil Conservation Service) as HEL (Highly Erodible Land). Of course, land atop a canyon would be. The most inappropriate land for application of toxic material.

The SEPA was a joke. It was conspicuously written in boiler plate, in a copy and paste manner from other such documents and bore little resemblance to our canyon environment. Coyotes were not among the animals listed. Only wells were listed, not springs. Some of the wells named are farther away from the fields in question than our own spring is. One was even on the opposite wall of our canyon!

Of course none of this matters to the Department of Ecology, which is in the grip of the waste and other polluting industries. We found that Ecology staff were very aggressive in their advocacy for their partnership with FMF, and at times rude to opponents of this reckless venture. A friend of mine, who is a retired employee of Ecology said, "We don't tell people to not pollute. We only let them know how much they can pollute."

The only thing that protected us in the end, was the publicity we generated as Protect Mill Canyon Watershed (protectmillcanyon.org) with help from the Sierra Club. It forced Garry to change the Landowner Agreement part of the application to move the project that would have been a quarter mile from the canyon to 5 miles distant, and reduced the acreage by three quarters. This was enough to make FMF lose interest in the permit that Ecology had foolishly approved for Rosman Farms.

Respectfully,
 Morton Alexander

32621 Mill Canyon Road North
Davenport, WA 99122

Response to I-22-1

We appreciate the time you took to bringing your concerns about Ecology's role in this process to light and highlight some potential ethical concerns. Our role is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law. We do our due diligence and the purpose of public participation is to give folks the ability to correct mistakes and generally make us aware of things we might not otherwise be aware of.

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)⁸ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel. Ecology added additional comments where discrepancies or lack of information was noted.

I-23: Carolyn Brock

Comment I-23-1

As a family that depends on well water it is unsettling to have ANY biosolids being spread on grounds that will effect those waters. Water is becoming an extremely important. We can no longer turn our head to the fact that our waters are being contaminated in many ways, known and unknown. Our world is increasingly being contaminated by many uses and we should not allow any more potential elements to be entered into the mix.

Response to I-23-1

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:
<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site

⁸ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-23-2

We need to protect our environment both above and below ground for generations to come. Biosolids like all waste products need to be managed in a more sustainable way than spreading across the land. We already have many ground treatment sewer systems that have enough contaminants in general.

As a considerate government this should not be allowed. Our communities are too important to us, our county, country and the world.

Response to I-23-2

Ecology agrees with you that the environment needs to be protected for generations to come. Statute allows for land application of biosolids because it has been shown to be an environmentally safe practice when state and federal rules are followed.

Ecology also agrees that we need to be mindful of the waste and pursue creative ways to sustainably manage those wastes. There are studies currently looking into alternative uses for biosolids, but they have not yet gained enough evidence to add additional beneficial uses to state or federal rules.

I-24: Susan Miller

Comment I-24-1

My husband and I live outside of Onalaska not far from Burnt Ridge. We are very concerned about the prospect of Fire Mountain Farms obtaining permits to apply sewer sludge (biosolids) to a site on Burnt Ridge, as well as on other land in Lewis County. We have read, and heard from various people, that Fire Mountain Farms has a history of non-compliance with DOE biosolids regulations. We also know that DOE does not have enough people to properly supervise this company.

Response to I-24-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend

that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

Comment I-24-2

We understand that the Burnt Ridge site is in the watershed for Mill Creek, a salmon stream that flows into the Cowlitz River at the Fish Hatchery. Additionally, Lewis County has designated hydric soils, a critical aquifer recharge area, steep slopes, and wetlands within this site. This site is not appropriate for spreading biosolids.

Response to I-24-2

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Comment I-24-3

We are also concerned about the amount of traffic, especially heavy semi-trucks that will be traveling on Jorgensen Road. According to traffic estimates provided by Fire Mountain Farms, between 30-1200 18 wheeler trucks as well as 30-1200 pick-up trucks will travel to each site between March and October every year. Jorgensen Road is a narrow country road with no shoulders and steep ditches on both sides. It is also lined with houses and farms. This will constitute an astonishing amount of new traffic on our road which will be unsafe as well as very noisy.

Response to I-24-3

The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County

officials if you still have concerns regarding traffic and roads.

Ecology requires a Spill Prevention and Response Plan when biosolids are being transported over the public roadway so that appropriate action can be taken in case of a spill. Action includes engaging in spill prevention measures to prevent a spill from occurring. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard.

Comment I-24-4

Per DOE regulations, it is not safe for cattle to graze for 30 days on sludge applied fields. What about the safety of the deer and elk in our area (we see both regularly around our house)? They will have unrestricted access to the land, as will birds of prey, coyotes, and other wild and domestic animals.

Response to I-24-4

Grazing restrictions are limited to domestic animals while the pathogens are further reduced by environmental factors like temperature, pH, moisture and UV radiation. The 30-day period is a conservative site restriction designed to protect livestock and the most highly exposed individuals. These restrictions are not required for wildlife because they are not confined to specific fields for grazing and thus they have less potential of coming into contact with and transporting pathogens.

Further, studies have shown that biosolids can be a useful tool for restoration by improving prey availability for birds of prey in degraded habitats (Buers et al. 2019, Meineke 2020). Additionally, no adverse impacts have been shown on wildlife exposed to biosolids-treated soils, or to humans from trace elements found at the current concentrations in biosolids (Fuchsman et al 2010; Chaney et al 1996).

Buers, M., F.I. Doyle, K.J. Lawson, and K.E. Hodges. 2019. Effects of biosolids amendments on American Kestrel nest site selection and diet. *Canadian Journal of Zoology* 97: 1186–1194.

Chaney R.L., Ryan J.A. and G.A. O'Conner. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. *The Science of the Total Environment* 185:187-216.

Fuchsman P., Lyndall J., Bock M., Lauren D., Barber T., Leigh K., Perruchon E., and M. Capdevielle. 2010. Terrestrial ecological risk evaluation for triclosan in land-applied biosolids. *Integrated Environmental Assessment and Management* 6:408-418.

Meineke, J. 2020. Effects of biosolids on a grassland community of rodents and birds of prey in British Columbia. MSc, University of British Columbia Okanagan, Kelowna BC.

Comment I-24-5

I am requesting that an Environmental Impact Statement be required for each of the five properties before moving forward with DOE approval. Please carefully consider these applications. We do not believe these sites, especially the Burnt Ridge site, are appropriate for the spreading of biosolids.

Response to I-24-5

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)⁹ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).¹⁰

I-25: Ursula Geddes

Comment I-25-1

Number 1 I saved for 20 years to buy this property on Lincoln Creek and I believe living downwind from a sludge spreading area is going to decrease my property values and make it essentially unsellable. A few years ago I had a neighbor spreading human sludge on his fields we couldn't go out of the house for 2 months when I did go out to feed the animals I had a

⁹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

¹⁰ <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C>

terrible headache and felt nauseous this is not something I look forward to having to go through every single day of the rest of my life.

Response to I-25-1

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-25-2

number two the traffic and roadways out here are not set up for this kind of abuse there are very narrow roads windy roads no shoulders or sidewalks they're bordered by very deep ditches and lined with residents this is going to be a great danger to humans wildlife people riding horseback not to mention just commuting to work.

Response to I-25-2

The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

Ecology requires a Spill Prevention and Response Plan when biosolids are being transported

over the public roadway so that appropriate action can be taken in case of a spill. Action includes engaging in spill prevention measures to prevent a spill from occurring. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard.

Comment I-25-3

number three this is a high flood area I have photos of that area you're talking about on Lincoln Creek that floods every year what kind of damage is that going to do to wildlife and to humans going into their well systems has this been tested for the kind of Mercury and lead that are going to be seeping off of these areas not to mention just the bacteria.

Response to I-25-3

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy and Loyo-Rosales 2015).

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Comment I-25-4

Lincoln Creek goes right through this area and when it does flood it is more like a high-powered stream than a or river than a creek.

Response to I-25-4

Ecology acknowledges that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when

biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. The MSA can be found at <https://www.wadairyplan.org/MSA>. The buffer zones to Lincoln Creek has been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window.

Comment I-25-5

We have elk deer all sorts of wildlife cows horses what is this going to do to them.

Response to I-25-5

Grazing restrictions are limited to domestic animals while the pathogens are further reduced by environmental factors like temperature, pH, moisture and UV radiation. The 30-day period is a conservative site restriction designed to protect livestock and the most highly exposed individuals. These restrictions are not required for wildlife because they are not confined to specific fields for grazing and thus they have less potential of coming into contact with and transporting pathogens.

Further, studies have shown that biosolids can be a useful tool for restoration by improving prey availability for birds of prey in degraded habitats (Buers et al. 2019, Meineke 2020). Additionally, no adverse impacts have been shown on wildlife exposed to biosolids-treated soils, or to humans from trace elements found at the current concentrations in biosolids (Fuchsman et al 2010; Chaney et al 1996).

Buers, M., F.I. Doyle, K.J. Lawson, and K.E. Hodges. 2019. Effects of biosolids amendments on American Kestrel nest site selection and diet. Canadian Journal of Zoology 97: 1186–1194.

Chaney R.L., Ryan J.A. and G.A. O'Conner. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. The Science of the Total Environment 185:187-216.

Fuchsman P., Lyndall J., Bock M., Lauren D., Barber T., Leigh K., Perruchon E., and M. Capdevielle. 2010. Terrestrial ecological risk evaluation for triclosan in land-applied biosolids. Integrated Environmental Assessment and Management 6:408-418.

Meineke, J. 2020. Effects of biosolids on a grassland community of rodents and birds of prey in British Columbia. MSc, University of British Columbia Okanagan, Kelowna BC.

Comment I-25-6

What kind of hazardous waste are they going to be combining with the biosolids that could be damaging the environment like we know that the fire mountain farms is done before. all the

neighbors in this area should be notified as what's going on there are plenty of people elderly that are not on the internet they do not know what is going on what the permitting process is around this area we should be notified by mail I only just found out about this and only had a couple of days left to even comment.

Response to I-25-6

Ecology is deeply committed to public involvement and we do our best within the limits of the law to ensure that permittees inform neighbors about upcoming actions. Public notice for the proposed biosolids land application site met the requirements of chapter 173-308 WAC¹¹ section 310 (13) of the Biosolids Management Rule. According to the rule, the proponent (Fire Mountain Farms) issued a notice in a newspaper of general circulation in Lewis County, where they propose to land apply class B biosolids. This notice was published in the Chronicle on October 15th, 2020. Public comments were accepted by Ecology for 55 days, instead of the minimum of 30 days, following the issuance of newspaper notice until December 2nd, 2020. Ecology also held a virtual public meeting to inform the public of the proposal, and to receive public testimonies on November 18th, 2020. Additionally, notices of the hearing and public comment period were mailed to about 86 interested people by Fire Mountain farms and email notices were sent to about 11 interested people by Ecology. Fire Mountain Farms posted the physical public notice at the proposed application sites for the same 55 day period.

As per the rule, anyone who submitted a comment during this public comment period has been added to Fire Mountain Farm's Lewis county interested parties list. The interested parties list is maintained by the proponent as per the biosolids rule, Chapter 173-308-310 (13) (g) (vii). Everyone on Fire Mountain Farm's Lewis County interested party list will be notified when decisions or changes are made to the current proposal, as well as other changes to their permit occurring in Lewis county. We are very sorry to hear that you were not aware of actions and your ability to participate in the process and would appreciate any feedback on how we can better reach residents.

Comment I-25-7

I'm very concerned about the health hazards to this I know when my neighbor was doing this I believe it was four or five years ago I had a tremendous headaches and nausea that is not what I moved out to the country to experience.

Response to I-25-7

Ecology acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

Comment I-25-8

I am requesting that an environmental impact statement be required for each of the five properties before moving forward with the DOE approval

Response to I-25-8

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable

¹¹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)¹¹ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).¹²

I-26: Pete Hammer

Comment I-26-1

I am a resident of Lewis county and a member of the board of directors on the Chehalis River Basin Land Trust. Our mission is to preserve the natural environment that affects the health of the Chehalis river through easements and purchases of lands. The main reason being to preserve the salmon runs along the Chehalis river and it's tributaries. My concern is that Fire Mountain Farms will run the risk of contaminating streams that feed the river.

Response to I-26-1

In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-26-2

I strongly feel that the five parcels to be used by Fire Mountain Farms should undergo a full environmental review and be treated as brand new permits. There seems to be a great concern that this practice could be detrimental to human and animal health not to mention unknown and potentially damaging chemicals leeching into streams and river. Thank you for your time.

¹² <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C>

Response to I-26-2

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)¹³ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).¹⁴

I-27: Seth Coe

Comment I-27-1

I personally find it absolutely ridiculous that a family that has broken the rules for 20 years is now being allowed to start up again. Bob Thode has been caught on several occasions breaking rules, has not revived ANY repercussions and you think it's a good idea to give his son, who helped him break rules for 20 years, the same permit?! It blows my mind how bias the Department of Ecology is towards FMF. You let them provide their own 3th party samples???? It seems to me, and all the other concerned citizens, that FMF must have bought off the Department of Ecology to be able to continue spreading biosolids. There is no other explanation. It is truly sad that money and greed seem to be more important than the health of WA citizens. Having recently moved from VA I am appalled by what I have witnessed from the WA Department of Ecology. My only hope is that you realized the mistake you have made and revoke the DNS and do not approve a permit for FMF.

Response to I-27-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and

¹³ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

¹⁴ <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C>

they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

I-28: Tiffany Husk

Comment I-28-1

Bob Thode says, "erosion does not occur at burnt ridge sites", even with an 18% sloped hill and a critical aquifer touching the bottom of his land?

Response to I-28-1

The question asked in the SEPA checklist is "Could erosion occur as a result of clearing, construction, or use?" This question is asking if erosion will occur as a result of the proposed project. There is what appears to be regular erosion occurring due to the presence of steep slopes on some of the Burnt Ridge fields. The use of biosolids has been shown to increase organic matter in the soil surface, which reduces erosion. This is because soil aggregates are less likely to break down into smaller particles that can be carried away by water or wind. Additionally, the added organic matter increases moisture retention, which also decreases soil erosion, as well as decreasing surface water runoff. The application of biosolids to the Burnt Ridge unit will not cause additional erosion.

Comment I-28-2

If they are allowed to spread biosolids at the burnt ridge sites they will be 100% contaminating a critical aquifer that feeds into Mill Creek and therefor Cowlitz river.

Response to I-28-2

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:
<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-28-3

The DNS that the Department of Ecology has must have be driven by the revenue created through taxes and fees. It is glaringly obvious that waterways will be contaminated by allowing FMF to continue the spreading they have been doing for years.

Response to I-28-3

In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
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Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-28-4

And yes they did not stop spreading when they lost their permit the first time.

Response to I-28-4

Ecology appreciates your concern. A permit is not required to land apply Class A biosolids or manure, which are both difficult to visually differentiate from Class B biosolids. Class A biosolids are required to be treated to the point where they are virtually pathogen free. While Ecology regulates the production of both Class A and B biosolids, only the land application of Class B is regulated. While Ecology monitors the production of Class A and B biosolids at all wastewater treatment plants in the state, we only monitor where Class B biosolids are delivered to for land application. Fire Mountain Farms did not receive Class B biosolids for these sites while unpermitted.

Comment I-28-5

Unfortunately, if FMF is allowed to continue spreading my family and I will be forced to move for our safety. Three of the four people that we know that have lived here for 20 years all have some sort of G.I. cancer. If that isn't a clear enough indicator for you then I don't know what to tell you. I truly hope the department of ecology makes a decision based off of the health of its citizens and future generations. Who knows, allow the spreading to continue and kill innocent civilians and contaminate salmon breeding grounds, or ignorantly ignore all the signs being shown to you. I pray that you will make the correct decision.

Response to I-28-5

Ecology acknowledges that you have concerns about the use of biosolids. Your comment has been noted.

I-29: Michael Dolan

Comment I-29-1

Fire Mountain Farms should not be re-permitted to resume spreading biosolids on these 5 sites. Their property isn't a remote isolated location, many families would be adversely affected. The smell is quite objectionable and quiet, narrow, country roads would be impacted by the increased truck traffic. Adjoining property valuation would be significantly reduced.

Response to I-29-1

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-29-2

There is a clear need for the proper and sustainable disposal of human waste safely. By its past practices, FMF has failed in this regard. Spreading whatever gets dumped down the drain from huge municipalities and from industry onto relatively small pieces of farmland for years isn't responsible stewardship. Human waste can be safely dealt with.

Response to I-29-2

Ecology agrees with you that the environment needs to be protected for generations to come. Statute allows for land application of biosolids because it has been shown to be an environmentally safe practice when state and federal rules are followed.

Ecology also agrees that we need to be mindful of the waste and pursue creative ways to sustainably manage those wastes. There are studies currently looking into alternative uses for biosolids, but they have not yet gained enough evidence to add additional beneficial uses to state or federal rules.

All biosolids applications must be applied at an agronomic rate, which is determined by the crop's need for nitrogen. This protects groundwater from the risk of nitrate contamination. Agronomic rates must be sent to the biosolids coordinator for evaluation before land application of biosolids can begin. Fire Mountain Farms will have increased oversight on the nutrient sources they apply to biosolids permitted fields to help prevent past infractions from re-occurring.

Comment I-29-3

All the other toxins and chemicals that get put into the waste stream shouldn't be dumped on to land from which crops are grown for human consumption.

Response to I-29-3

Ecology hears that you are not interested in having biosolids land applied near you and your comment has been noted. The Washington state legislature has declared in chapter 70A.226 RCW¹⁵ that properly managed biosolids are a valuable commodity and that a program be established to manage municipal sewage sludge. Ecology is in charge of managing the land application of biosolids in a responsible manner.

Comment I-29-4

Cattle is regularly grazed on their land.

Response to I-29-4

Federal regulations require a 30 day grazing restriction between when Class B biosolids are applied and when cattle can graze on agricultural lands. The 30-day period is a conservative site restriction designed to protect livestock and humans that are most likely to come into contact with biosolids. The requirement is listed in 40 CFR Part 503(b)(5) – Site Restrictions, (v) Animals shall not be grazed on the land for 30 days after application of sewage sludge. This requirement was established by the publication of 40 CFR Part 503 to the Federal Register on February 19, 1993.

The grazing restriction is designed to protect human health and the environment:

1. It is intended to limit the potential contact of livestock with freshly applied biosolids, where such livestock could act as potential vectors in transporting biosolids offsite.
2. Potential pathogens remaining in Class B biosolids are rapidly reduced after being applied to the field. Pathogens in the field applied biosolids are exposed to extremes in temperature, moisture, pH, UV radiation, and indigenous microflora.
3. The 30-day restriction allows time for the partitioning and eventual breakdown of many trace organic compounds within the soil system.

If you believe livestock have been allowed on a field before the 30 day grazing restriction expires, please contact the biosolids coordinator with a description and location of where this was observed.

¹⁵ <https://apps.leg.wa.gov/rcw/default.aspx?cite=70A.226>

Comment I-29-5

Drainage from their fields feeds into salmon streams.

A better way of disposing municipal sludge would be to spread it in less populated areas on forest land such as is done by the city of Chehalis for pulp production.

Response to I-29-5

Your comment has been noted.

I-30: Carolyn Dolan**Comment I-30-1**

Fire Mountain Farms has broken our trust from its past history and patterns of biosolids management. We have no reason to believe this time will be any different. Permits are only as good as the applicant's willingness to comply. In this particular case, the Department of Ecology does not have the time, energy or finances to dedicate enough monitoring resources to ensure the health and safety of the surrounding community. And from what I understand that is the mission of the Department of Ecology: to ensure our safety by making sound environmental decisions. If this permit is granted, Fire Mountain Farms needs to take more monitoring responsibility. There should be more transparency because of FHF willingness in the past to accept materials from several sources that were not permitted. They should provide bi-monthly monitoring of the their well and soils and neighboring wells and soils at Fire Mountain Farms expense. The tests results should be made public and easily accessible to neighbors and community members. WAC 173-308-150(3) allows for greater frequency of testing and monitoring when appropriate based on site suitability and applicator violations.

Response to I-30-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law. We do our due diligence and the purpose of public participation is to give folks the ability to correct mistakes and generally make us aware of things we might not otherwise be aware of.

As a result of your comments and others from the public, additional conditions have been added to Fire Mountain Farm's Additional and More Stringent Conditions. Please review these conditions on our website when you have a moment (<https://tinyurl.com/y5a8cjue>). If you are concerned that this company is not in compliance with these conditions, please report your observations to the southwest regional biosolids coordinator immediately. For additional information on the soil monitoring occurring at these sites, please contact the biosolids coordinator or submit a public records request at <https://tinyurl.com/vjwpk0ud>.

Comment I-30-2

1. Verification of the source of materials applied is more difficult because that goes back to the trust issue. Administrative records at the Pollution Control Hearings Board (PCHB) indicate that the applicant, Fire Mountain, has violated Ecology's biosolids regulations in past applications. These violations are unacceptable. Fire Mountain's response was not

to come into compliance, but rather to aggressively push for rule changes and to continue application to contaminated areas. In 2015, Fire Mountain mixed industrial waste in biosolids prior to application. See PCHB No. P14-109c. Rather than comply, Fire Mountain attempted to register the dangerous waste as a fertilizer. See PCHB No. P16-302. After failing in that attempt, Fire Mountain attempted to resume spreading biosolids over the same areas already found to be contaminated by its industrial waste. See PCHB No. P16-050. Fire Mountain's repeated violations and attempt to skirt regulations indicate that the company cannot comply with WAC 173-308-090, which requires any person who prepares biosolids to ensure compliance with Ecology regulations and the permit, and WAC 173-308-110, which requires any person who applies biosolids to comply with Ecology regulations and the permit. I understand that Department of Ecology wants to work with biosolid permit violators to help them stay in compliance and correct past actions but that assumes the department and community can trust the applicator. A plan needs to be put in place where all materials are verified before application. I do not see a viable plan included in the permit. Cameras would need to be installed at all of the sites for verification, along with appropriate paperwork from the suppliers. 24 hour footage would need to be reviewed by a reliable 3rd party and paid for by FMF. And even after going to this extent, this procedure would not guarantee the possible application of unapproved materials without a permit. On this basis the permit should be denied.

Response to I-30-2

Fire Mountain Farms (FMF) ceased receiving any waste materials from Emerald Kalama Chemical (EKC) by June of 2014. EKC hired a third party consultant, Landau Associates, that showed that the action of applying a hazardous waste listed as containing benzene and toluene did not cause environmental damage to the soil. Benzene and toluene were not detected in the soil at Model Toxics Control Act (MTCA) cleanup levels. Additionally, there is a process by which an agricultural business can register a hazardous waste as a fertilizer with the Department of Agriculture if they are able to show the waste meets certain guidelines for safe application. FMF has the right to pursue that course of action. At some point, Fire Mountain Farms chose to not continue their fertilizer registration which brought them out of compliance.

Ecology has learned from past oversight mistakes and now requires Fire Mountain Farms to report all nitrogen nutrient sources applied to permitted fields. If other nitrogen nutrient sources are used they are factored into the biosolids agronomic rate which will reduce the amount of biosolids that can be applied to that field. Additionally, if a nitrogen nutrient source requires permitting by another entity, Ecology will require additional information to confirm that that source is up to date on permitting requirements.

All biosolids applications must be applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. This protects groundwater from the risk of nitrate contamination. As a part of how the biosolids program operates, agronomic rates must be sent to the biosolids coordinator for evaluation before land application of biosolids can begin. Annual monitoring of residual soil nitrate levels are used to confirm that Class B biosolids are being applied at the approved rate.

Comment I-30-3

3. The buffers for wetlands and creeks are inadequate, especially in the rainy months of March, April, May, and June. The SEPA checklist fails to highlight the conflicting DOE

and Department of Fish and Wildlife recommendations for protection of aquatic species particularly salmon. A plan needs to be put in place to ensure their protection and eliminate downstream consequences from FMF operations. I am requesting that an Environmental Impact Statement be required for each of the five properties before moving forward with DOE approval. A point of compliance monitoring system for groundwater contamination needs to be designed and monitored. See WAC 173-200-060 (Point of compliance) and WAC 173-308-190 (6). The permit application and SEPA checklist fails to disclose or evaluate likely impacts to groundwater, and associated impacts to environmental and human health. These deficiencies are glaring in light of the multiple reports on groundwater in the region, the enormous consequences of groundwater contamination, and the established groundwater to surface water connectivity. It also does not identify nearby wells and critical areas protected under County zoning.

Response to I-30-3

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)¹⁶ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).¹⁷

Comment I-30-4

4. The SEPA checklist entirely fails to disclose impacts of likely contaminants, including contaminants of emerging concern and microplastics and nanoplastics. Simply citing applicable laws does not constitute disclosure of environmental impacts. The checklist also fails to analyze the cumulative effects of contamination over time. And it fails to adequately survey impacted species. Who has done this documentation and evaluation besides FMF? I am requesting that an Environmental Impact Statement be required for each of the five properties before moving forward with DOE approval.

Response to I-30-4

Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents,

¹⁶ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

¹⁷ <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C>

plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products. All of these household products end up in our wastewater system after being flushed or drained from our personal residences.

If a chemical ends up in biosolids we know that it has properties that bind it to the solids (otherwise it would have remained with the liquids, i.e. wastewater effluent). This means that chemicals present in biosolids are not readily water-soluble and therefore, unlikely to leach after land application. Biosolids are land applied at agronomic rates based on the nutrient needs of the crop being grown. When applied to the soil, physical and chemical processes occurring within the soil break down a lot of chemicals. The U.S. Environmental Protection Agency (USEPA), other federal agencies, and universities have and continue to conduct research on the potential risks of trace chemicals in biosolids. Given the information currently available, Ecology continues to think Federal (40 CFR Part 503) and Washington (chapter 173-308 WAC)¹⁸ regulations for biosolids management protect human and environmental health.

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. *Environment International* 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. *Science of the Total Environment* 185:187-216.

Comment I-30-5

5. A complete moratorium should be imposed on the spreading of Class B biosolids near humans or wildlife until a formal study is conducted on the consequences of exposing wildlife and humans to covid pathogens remaining in Class B biosolids. Although most of the covid pathogen is destroyed in the wastewater treatment facility, it has been documented that some of it passes through. Because of this, some states require operators to wear N-95 masks when spreading the material. In Europe a mutant strain has jumped from mink to humans. The Washington Post has documented that deer mice can contract and spread the virus. Our country has suffered too much, lost too many lives and businesses to not take this extra precaution to make sure this virus does not mutate through a native species vector. Making sure the new vaccines keep their viability intact is imperative for the safety of our country. Covid is a completely new pathogen and we cannot make any assumptions about its survivability in the sewage treatment process, in the native environment or transmission between native species and humans. We must conduct the scientific studies and not make assumptions based on studies from other pathogens. SEPA imposes a "look before you leap" requirement in addition to existing law.

Response to I-30-5

Wastewater treatment plants treat viruses and other pathogens. COVID-19, a strain of coronavirus, is a type of virus that is particularly susceptible to disinfection. For wastewater, some recent studies have found RNA fragments but not infectious virus in wastewater. This

¹⁸ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

means scientists can detect whether a local population has infected people, but the RNA fragments in the wastewater do not have the ability to infect new people. The morphology and chemical structure of this virus are similar to those of other coronaviruses for which there are data both on their survival in the environment and on effective measures to inactivate them (WHO 2020, Gundy et al 2008). The main routes of transmission of COVID-19 are respiratory droplets and direct contact.

World Health Organization. 2020. Water, sanitation, hygiene, and waste management for SARS-CoV-2, the virus that causes COVID-19. Reference number: WHO/2019-nCoV/IPC_WASH/2020.4

Gundy PM, CP Gerba and IL Pepper. 2008. Survival of Coronaviruses in Water and Wastewater. Food and Environmental Virology. 1:10-14.

Comment I-30-6

6. A formal, open and attentive system for permit denial or revocation and imposition of fines needs to be created. Perhaps on a point system? The current system is inadequate and appears to be at the whim of the DOE. Gross violations should not only be fined but the permit should be revoked and remain revoked. Points from minor violations should accumulate and a penalty imposed. The public should be able to report violations without intimidation. All neighbors and concerned parties should be aware of the system and contact information.

Response to I-30-6

Thank you for your idea of providing an online portal that publicly lists active permits, fines and permit denials and revocations. We will take this idea into consideration as Ecology moves towards having greater transparency in permit decisions.

Formal enforcement is one of many compliance tools available and may not be necessary to achieve compliance in every case. Technical assistance, partnerships with affected groups, and education are also key tools in achieving compliance. Formal enforcement is used when appropriate. Ecology uses the Biosolids Enforcement Guidelines for the Solid Waste Management Program as a guidance document to determining appropriate responses to incidents of non-compliance. It does not prescribe precisely what action or actions should be taken in each case, as each incident of non-compliance can be different. Therefore this document is intended to provide a useful tool to Ecology personnel which maintains maximum flexibility to deal with each individual incident. All regulated facilities and entities are expected to comply with biosolids management laws and regulations. Ecology strives to ensure that all facilities and entities know the legal requirements and how to comply with the law. If an enforcement action is necessary, Ecology will ensure that the action is clearly defined and consistent with the magnitude of the violation. Compliance with biosolids laws and regulations is critical for the protection of human health and the environment.

Comment I-30-7

7. My last comment comes from my experience as an organic farmer. As you are well aware the WA State Organic Program does not allow biosolids to be applied because of the high heavy metal accumulation in the soil. But putting that aside, for the sake or argument what is the role of a farmer applying biosolids? I know the DOE has been charged with applying this material to certain food crops as a fertilizer. So with that in

mind, one can't have it both ways. Are you fertilizing or are you "dumping". Fertilizing puts the crop first. A farmer only adds what is needed to benefit the soil and growth of the crop. "Dumping" is reapplying large volumes disregarding evaluation for crop growth or soil needs. I propose that the FMF permit application is attempting to fulfill the goal of the later. This is not an appropriate use of farmland. This is an attempt at industrial volumes of application. The volume of application should be reviewed to match the goal of its intent.

Response to I-30-7

All biosolids applications must be applied at an agronomic rate, which is based on how much nitrogen is needed for optimal crop growth. An agronomic rate can include nitrogen from other sources, like manure, which are subtracted from the overall rate allowed for biosolids. This protects groundwater from the risk of nitrate contamination. Agronomic rates must be sent to the biosolids coordinator for evaluation before land application of biosolids can begin. Soil samples are collected and analyzed at the end of the application season to confirm that biosolids were applied at the correct rate. For clarification Ecology does not apply biosolids, we give permits to farmers who want to apply biosolids within the framework of the law and ensure that these permittees follow the law.

I-31: Katharine Tennyson

Comment I-31-1

The proposed plan to spread biosolids on these 5 sites seems unwise and not well thought out. All sites have steep areas which will have run off, and some have salmon streams within the sites. A better way forward for the DOE and the county would be to agree on some specifications for spreading sludge and requiring the land to meet those specifications.

Examples would be land that was away from streams and rivers, flat or gently sloping (nothing greater than 5% grade). Away from homes where odor would be a problem and where danger to people, plants and animals would be at a minimum.

Long term the State and the County will need to research other methods of disposal which are safer, cost effective, and can be brought closer to sludge pickup sites to reduce truck congestion on our freeways and side roads.

Please deny these permits and rethink this plan. It is not worth the health and safety of our County, our residents, our flora and fauna and our water and land.

Response to I-31-1

In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-31-2

Away from homes where odor would be a problem and where danger to people, plants and animals would be at a minimum.

Response to I-31-2

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

I-32: Kay Crawford

Comment I-32-1

12/1/2020

Dear DOE staff,

Below please find my comments and concerns generated after careful study of Chapter 173-308 WAC (Biosolids Management) and all documents supplied by FMF.

Before starting I would like to say that my multiple and lengthy interactions with your employees, Mr. Peter Lyons and Ms. Shawnte Greenway, have been exemplary; they have been polite, professional, informative and patient while explaining the complicated

law.

As stated in WAC 173-308-010 (2) "The purpose of this chapter is to protect human health and the environment when biosolids are managed."

I firmly believe that DOE issuance of FMF permits for these five sites will not fulfill the stated purpose of the law, and will actually endanger human health and the environment; an opinion based on careful reading of FMR's entire SEPA Checklist and all related permit application documents (SEPA) submitted to your department. In the comments below, I hope to demonstrate that:

1. Much of FMF's SEPA application is incomplete, misleading, replete with inaccuracies or simply does not address the questions asked.

2. While I appreciate the inclusion of DOE's "Additional and More Stringent Requirements" specifically for FMF due to their history of regulation non-compliance and decades of poor relations with their neighbors, these requirements do not go far enough to ensure the protection of human health and the environment.

3. This FMF SEPA application is an insufficient basis with which to determine there will be no significant adverse impact on the environment and does not contain the information required for biosolids land application under:

RCW 43.21C.030(2)(c)

(2) all branches of government of this state, including state agencies, municipal and public corporations, and counties shall:

"(c) Include in every recommendation or report on proposals for legislation and other major actions significantly affecting the quality of the environment, a detailed statement by the responsible official on:

(i) the environmental impact of the proposed action;

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented;

(iii) alternatives to the proposed action;

(iv) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented

4. Thus, DOE's Determination of Nonsignificance should be rescinded and either:

a) the FMF permit request for all five sites be denied or

b) an Environmental Impact Statement be completed for each site.

Response to I-32-1

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)¹⁹ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

¹⁹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).²⁰

Comment I-32-2

A. Agreed Order Conditions -Additional and More Stringent Requirements

- Applicable law - WAC 173-308-310(19)²¹ “(a) On a case-by-case basis, the department may impose requirements for the beneficial use of biosolids that are in addition to or Certified on 10/25/2019 WAC 173-308-310²⁰ Page 10 more stringent than the requirements in this chapter if the department believes that the additional or more stringent requirements are necessary to protect public health or the environment from any adverse effect of a pollutant in the biosolids or to ensure compliance with this chapter. (b) In addition to other considerations, failure of a generator, applier, or landowner to conform to any applicable requirements of this chapter may be cause to impose additional or more stringent requirements.”

COMMENT PREAMBLE

FMF has a checkered past in complying with DOE laws and permit requirements and, as several comments from current and past neighbors submitted to you will show, a very poor relationship with the neighbors impacted by their “sludge farming”. Please note that all five of these inappropriate (for biosolid application) properties are located in rural areas where neighbors culturally mind their own business and are historically loathed to “rat out” their neighbors. In addition, FMF has a history of ignoring or trying to intimidate neighbors who have legitimate complaints, causing additional reluctance to file complaints with the County and State. Thus It is important for DOE to put the negative comments and description of past events that you DO receive from neighbors in perspective, rather than believing the lack of formal complaints in the past indicates “no problems”.

Response to I-32-2

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend

²⁰ <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C>

²¹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173.308.310>

that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

Comment I-32-3

COMMENTS - General Conditions:

1. Item #1 - Storage -Inability of DOE to evaluate long-term storage of biosolids.

Applicable law ,Äì

WAC 173-308-080 Definitions

"Facility" means a treatment works treating domestic sewage as defined in this chapter, unless the context of the rule requires otherwise. For the purposes of this chapter a facility is considered to be new if it has not been previously approved for the treatment, storage, use, or disposal of biosolids or sewage sludge.

WAC 173-308-280 Requirements for facilities storing biosolids or sewage sludge.

(1) Facilities storing biosolids or sewage sludge under a local, state, or federal water pollution control permit or another environmental permit and facilities conducting temporary, smallscale storage as defined in WAC 173-308-080 (no more than thirty days in a tank holding no more than 10,000 gallons) are exempt from this section if the department determines that the standards in subsection (3) of this section are being met.

(2) Facilities other than those in subsection (1) of this section storing biosolids or sewage sludge must do so in accordance with the provisions of a permit issued under this chapter.

(3) Biosolids or sewage sludge may not be stored in a manner that would be likely to result in the contamination of groundwater, surface water, air, or land under current conditions or in the case of fire or flood.

(4) Facilities existing on July 1, 2007, storing liquid biosolids or sewage sludge in surface impoundments must meet the requirements for the design, construction, and operation of surface impoundments in chapter 173-304 WAC or the standards in chapter 173-350 WAC.

(5) After July 1, 2007, new facilities proposing to store biosolids or sewage sludge in surface impoundments, facilities that are proposing a new surface impoundment, and facilities that are proposing to upgrade existing surface impoundments must meet the requirements for the design, construction, and operation of surface impoundments in chapter 173-350 WAC.

COMMENT

"The context of the rule" can be interpreted to include the facilities of biosolids land appliers, which must follow the requirements above..

a) When will long-term storage be evaluated? Will this be a public hearing process?

b) Are the storage ponds/tanks built to code? Were they permitted? How safe are they?

c) Are these storage areas leaking? Saturating the ground below and impacting water quality and potentially neighboring wells?

d) What happened to holding pond runoff caused by an average of 47" of rain per year for six years? As FMF was not allowed to de-water these hazardous waste contaminated holding facilities, where did the excess (now contaminated) rainwater go?

e) In the past, the holding pond on Burnt Ridge Unit has failed, roaring down on properties below, impacting Mill Creek (salmon stream) and ultimately the health of the Cowlitz River. All of the holding facilities, full of old, contaminated, Class B biosolids, have been sitting since 2014. What maintenance, if any has occurred during that time?

f) What liability is DOE and the County taking on by permitting these sites to begin apply biosolids without evaluating the current human and environmental safety of the biosolids holding facilities? As far as safety goes, it does not matter whether hundreds of thousands of gallons of waste is stored “temporary or long term”; it is still a danger to neighbors and a liability to the State/County if they proceed with these permits without a careful review of the holding/staging facilities of each site.

REQUIREMENT

DOE must rescind the DNS until careful evaluation of holding facilities is conducted by qualified, arms length third party professionals; such evaluations paid for by FMF. Since these five sites are considered new permits, they must comply with current building and safety codes (including employee safety). To move forward with this permit process without this review, including implementing any modifications/repairs made to the facilities recommended by professionals, will be negligent on the part of DOE and Lewis County and open both to significant liability.

Response to I-32-3

Ecology agrees that insufficient information was provided to evaluate long term storage, which is why no long term storage was approved for any of the units. This includes both lagoons and storage bunkers. The maximum six weeks of staging refers to the act of accumulating and storing biosolids in a field until enough has been accumulated to land apply. If rain is projected to occur during the time biosolids are staged in a field, the piles must be covered with a tarp or other non-permeable barrier to prevent surface runoff or leaching.

If Fire Mountain Farms wants to add long-term storage to these units at a future date this would be considered a significant change to their permit. Storage facilities would need to be inspected to make sure their structural integrity is in-tact. Additionally, another SEPA evaluation would need to be conducted and everyone on the their Lewis County Interested Parties List (IPL) would need to be notified so they have the opportunity to submit comments. Everyone who has submitted a comment during this comment period has been added to their IPL.

Comment I-32-4

2. Item #4 - Late Season Application and Max Application Window ,Äi

“October land application for all sites needs DOE approval due to run-off risk per “Table 1 -Western WA Biosolids Application Management Matrix.”

Applicable Law

WAC 173-308-190 Protecting waters of the state

(6) When the potential for groundwater contamination due to biosolids application exists, the department may require groundwater monitoring or other conditions in accordance with the provisions of chapter 173-200 WAC. If it is determined that an enforcement criterion may be violated, an evaluation must be conducted to demonstrate compliance with the provisions of chapter 173-200 WAC.”

WAC173-308-210 (b)

(ii) Bulk biosolids may not be applied to the land so that they enter a wetland or waters of the state, unless approved in a permit issued by the department or by EPA with the approval of the department.

COMMENT

It seems that only Big Hanaford site and Newaukum Prairie site have a “Max. Application Window”, reducing the time they may spread biosolids, regardless of testing results, to between March (Newaukum Prairie)/April (Big Hanaford) and October 15th. ALL of the five sites have hydric soils, wetlands and surface water adding to run-off

risks. In addition, Lincoln Creek site has a salmon stream running through the middle of the site and empties directly into the Chehalis River. Burnt Ridge and Homestead have at least 1/3 of the site in steep slopes (with soil types that facilitate runoff) and are in the watershed for Mill Creek, a salmon stream that empties into the Cowlitz River.

Per US Climate Data, average monthly precipitation for Centralia, WA is: February (4.79"), March (4.9"), April (3.57") and October (4.33"). Note: Average monthly rainfall is between 6.82" and 7.88" for November through February.

Per DOE Item #4 Requirement of the use of the Western WA Biosolids Management Matrix" is required "based on DOE's determination that, at the western WA sites covered by this agreed order, the potential for groundwater contamination due to biosolids application exists"

With these run-off and groundwater contamination risk factors that DOE has stated, it is inconceivable that DOE will allow biosolids to be land applied on three of these sites ALL WINTER LONG, based solely on once per year soil tests done in early fall at the end of the dry season. It also defies logic that application in October (after the dry season) is subject to the "Biosolids Application Management Matrix" yet the months of March and April (with commiserate rainfall PLUS saturated ground) are not and no soil testing is conducted.

REQUIREMENT

While I strongly believe none of these sites should be permitted for Class B biosolids, application, short of that, all five sites should have "Max Application Windows" of April 1 through October 15, with required use of the "Biosolids Application Management Matrix" for the months of April (which will involve testing in April) and October.

Response to I-32-4

Ecology acknowledges that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Ecology hears that you are not interested in having biosolids land applied near you. The Washington state legislature has declared in chapter 70A.226 RCW²² that properly managed biosolids are a valuable commodity and that a program be established to manage municipal

²² <https://apps.leg.wa.gov/rcw/default.aspx?cite=70A.226>

sewage sludge. Ecology is in charge of managing the land application of biosolids in a responsible manner.

Comment I-32-5

3. Item #6 - Soil Sampling -“to be conducted BY FMF per Soil Sampling Plan dated June 22, 2017”(and found in “Additional Appendices”in Site Specific Land Application Plan for each site).

Applicable Law

WAC 173-308-160 Biosolids pollutant limits

WAC 173-308-210 920 (2) Pollutant concentrations, (3) Pathogens (5) (a)

Class B biosolids

COMMENT

a) Testing process oversight gaps

Many people better versed than I understand, and will provide, comments on the dangers to human and environmental health that biosolids pose, including the many contaminants that are not required to be tested. I would like to address the oversight gaps in the actual testing process, which is conducted solely by FMF on the honor system. Based on multiple instances, over decades, of dishonorable behavior, allowing FMF to conduct their own tests with minimal DOE oversight is an example of FMF gross conflict of interest and is foolish at best.

I understand that DOE is under severe budget constraints and is unable to thoroughly monitor all testing steps. As an example, if DOE staff is physically on site during soil sampling (which rarely occurs), only the sampling and placement of soil sample in a cooler is observed. Currently no DOE staff observes and can verify that the soil sample observed is the one actually sent to a lab. If DOE staff is not observing soil/water table testing in person, photos of the testing are submitted by FMF to DOE; a system obviously rife with testing sample substitution potential. Many government agencies and corporations that require drug testing require observation of a subject when providing urine/blood samples if the subject has shown a history of circumventing the testing process. Based on FMF’s checkered history, why should FMF be treated differently?

b) Frequency of tests

WAC 173-308-150 Frequency of biosolids monitoring

(5) “The frequency of monitoring must not be less than once per year when biosolids are applied to the land.”

DOE staff has indicated that soil tests will only be required annually, in the fall prior to October 1, after the dry season. What is to prevent FMF from grossly over-applying biosolids at any one time prior to that, based on their clients’ demand/needs, risking wildlife, neighbors’ health and surface and groundwater quality? There is nothing in the statute that precludes more frequent testing, which in this case should be required.

In addition, does taking the one annual test at the end of the dry period provide a false picture of the nitrogen uptake potential for the following months when grass grows very little and grounds become saturated?

c) Full identification of clients for all tests.

WAC 173-308-290 Recordkeeping (3) Appliers of nonexceptional quality biosolids

There is long list of records in this section that FMR is required to itemize and maintain for five years. Is DOE sent a copy? Has DOE staff audited whether this information is accurate and maintained by FMF? Does DOE staff carefully review FMF’s annual report on each site? As an example, included in the Site Specific Land Application Plan ,Äi Additional Appendices for each site is a chart and graphs of soil test results. Clearly

stated on these documents is the client name "Emerald". Careful review of FMF's client list may have exposed its 15 year illegal combination of hazardous waste from Emerald Chemical with permitted biosolids at an earlier point in time.

d) Payment for Permitting, Monitoring and Additional and More Stringent Requirements

Do biosolids appliers like FMF pay annual fees and initial permitting fees to DOE the way waste water treatment plants are required to do (WAC 173-308-320 Permit fees)? If not, why not? There seems to be a great deal of money to be made in applying "industrial strength" loads of biosolids to marginal farmland. Biosolids appliers, like FMF, should pay their share (based on the volume they spread) in order to support the monitoring and auditing functions of DOE staff.

REQUIREMENT

a) Testing process oversight gaps: I believe it is a natural consequence of prior FMF bad behavior that FMF be required to have third party professionals (selected by DOE) conduct their soil and water table tests and these professionals be responsible for seeing that these tests are delivered directly to reputable third party labs; all to be paid for by FMF. Consider this a natural consequence/fee/penalty and necessary oversight for prior bad behavior.

b) Frequency of Tests: FMF should be required to have third party professionals (selected by DOE) conduct monthly soil tests and these professionals should be tasked with assisting DOE with analyzing the tests for trends and anomalies. Water table tests (literally a dip stick stuck in a 3.5' perforated PVC pipe) should be conducted by third party professionals, beginning with the first month of the Max Application Window and every two weeks thereafter until the water table is below 3'. FMF should pay for all testing, monitoring and analysis.

c) Full identification of clients for all tests: All tests and annual reports should state the full name of the client and type of business. DOE should verify these are legitimate, appropriate and permitted biosolids suppliers.

d) Payment for Permitting, Monitoring and Additional and More Stringent Requirements: In addition to annual fees based on biosolids volume land applied, FMF should be required to pay for any costs associated with additional oversight necessitated by their prior bad behavior.

Response to I-32-5

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. Your suggestion to accompany Fire Mountain Farms employees as they submit soil samples to an accredited lab will be taken into consideration.

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Leftover nitrates will accumulate in the soil until a significant amount of rain (greater than 5 inches occurring after September 1st) causes it to leach deeper into the soil. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Annual monitoring of residual soil nitrate levels is sufficient for compliance monitoring since land application is not

occurring during the wettest times of the year.

The depth to groundwater must be checked before every land application event to confirm groundwater is at least 3 feet from the ground's surface. Documentation must include the signature of employee who confirms this. Third party testing is not being required at this time.

Fire Mountain Farms annual reports are reviewed each year. This list of required documentation began being required for submittal with the annual report when they received final coverage in 2017. This requirement was added specifically because of the above mentioned incident.

Beneficial Use Facilities like Fire Mountain Farms pay both annual and initial permitting fees.

Comment I-32-6

4. Item #7 -Spill Prevention and Response Plan

Applicable Law

WAC 173-308-100 (2) Spill prevention/response plan

"Facilities must submit a spill prevention/response plan to the department which describes how they will attempt to prevent and respond to any spillage of biosolids or sewage sludge during transportation. The plan must include a list of contact names and numbers, an explanation of how and when they would be contacted, what their role is, and how a spill would be cleaned up"

COMMENT

While requiring the above Spill Prevention/Response Plan for companies that transport biosolids, DOE staff indicate there is no regulation that prohibits companies from dragging biosolids mud onto public roads or letting it run onto neighbors' land, nor procedures for mitigation when such accidents occur because "it is covered under rules for misapplication of biosolids on non-permitted land".

a) What are these rules? Perhaps "WAC 173-308-110 Requirement for a person who applies biosolids. "A person may not apply biosolids to the land except in accordance with applicable requirements of this chapter and any applicable permit issued under this chapter."?

b) This is an oversight that must be corrected. FMF has a history of ignoring neighbors' complaints when FMF biosolids spill onto the neighbors' property; whether from broken pipes, excessive spraying beyond required buffers/setbacks or actual containment failure.

In addition, FMF vehicles and biosolids spreading equipment are regularly observed pulling onto rural roads from fields after the application of biosolids, leaving muddy tracks of biosolid sludge/mud on the roads. This sludge mud is washed into drainage ditches, which flow directly into waterways (without the benefit of "plant uptake" and bacterial processes to eliminate remaining and allowable pathogens) and is tracked by vehicles onto non-permitted private and public properties, with resultant health risks and liability.

Due to FMF's history of spill accidents and non-response to clean up requests from neighbors, the next spill should NOT be considered a first time event and full penalties for non-compliance levied immediately.

REQUIREMENT

Item #7 - Spill Prevention and Response Plan must be expanded to require a Spill Prevention, Response and Mitigation Plan covering all instances where biosolids are tracked onto or spilled onto non-permitted lands and roads. The plan must include: a list of FMF (24 hour available) contact names and numbers, what their role is, how a spill

will be immediately cleaned up regardless of time of day or night, what mitigation and monitoring efforts by FMF will be required (including full panel well testing monthly for at least a year), immediate reporting of such to DOE and County and significant daily financial penalties if these procedures are not followed, as allowed by:

RCW 70A.226.080 Violations, "Monetary penalty.

"In addition to any other penalty provided by law, a person who violates this chapter or rules or orders adopted or issued pursuant to it shall be subject to a penalty in an amount of up to five thousand dollars a day for each violation. Each violation shall be a separate violation. In the case of a continuing violation, each day of violation is a separate violation. An act of commission or omission that procures, aids, or abets in the violation shall be considered a violation under this section."

Response to I-32-6

You are correct. WAC 173-308-110 states "a person may not apply biosolids to the land except in accordance with applicable requirements of this chapter and any applicable permit issued under this chapter." There are no applicable requirements that allow biosolids to be spread or tracked onto public roadways. . If you see biosolids being tracked onto the roadway at any site, please contact the southwest regional biosolids coordinator immediately to report your observations.

Comment I-32-7

5. Item #9 Buffers

COMMENT

While increasing the buffers from 33' to 50' is a step in the right direction, I do not feel it is sufficient to protect water quality. Why are foresters and developers required to create much wider buffers to protect waterway quality?

REQUIREMENT

Buffer requirements should be increased to 150'.

Response to I-32-7

Thank you for your input. There are several management practices required for these sites to prevent the conditions you are concerned about. Buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffers required for these sites exceed the minimum requirement of 33 feet in the federal rule (site location) and were increased in accordance with the Biosolids Management Guidelines for Washington State.

The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced to the following:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units

- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

The ability to land apply biosolids between October 1st and 31st is conditional. It may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. This determination is based off data available from the National Resource Conservation Service. The MSA can be found at <https://www.wadairyplan.org/MSA>. Approval is not guaranteed.

Comment I-32-8

6. Item #10 Annual Report Additions a) Interested Party List

Applicable law:

WAC 173-308-310 (13) Public notice and comment period

“Public notices and comment periods must minimally meet the requirements listed in this subsection”.

Comment

a) I am flabbergasted that DOE requires FMF to maintain the Interested Parties List, a clear conflict of interest as it behooves FMF to keep this list to a minimum in order to draw the least amount of attention to activities such as this permitting process. This is tantamount to having the fox keep the list of hens in order to notify them that they will be on the dinner menu!

b) I am appalled that the “Interested Party List” is not required to include: 1) all adjacent and across the street site neighbors, and 2) all residences on both sides of the street on rural road access that will be used to deliver biosolids to the site. Getting a late start, a group of concerned neighbors left flyers at neighbors’ homes notifying them of the ongoing permit process on the weekend of November 14th and 15th, a full month after the comment period had started. Every neighbor they met that weekend had no idea that a permitting process/comment period was being conducted on a serious issue that could impact their enjoyment of their home, property value and health. To a person they were deeply dismayed and incensed that the biosolids spreading could begin again and that they were not notified directly by DOE.

The “signage” announcing the public comment process is densely printed in black and white small type, requiring someone to get out of their car and get close to the sign to read it. In the case of the Burnt Ridge Site (where many know the Thodes live and have operated much of their business in the past), only one sign is posted at the very beginning of the property (perhaps actually on Logan’s property) and is not obvious the sign “belongs” to the Thode’s farm.

In the case of the two Burnt Ridge Road sites (Burnt Ridge and Homestead) and Big Hanaford site, the posted signs are at the end of a rural road, where many of the neighbors do not pass to get to their homes. During these winter dark hours (not to mention Covid isolation), commuting in the dark makes it impossible to see the signs if they were to actually drive by them. What about the housebound, physically challenged and/or elderly neighbors who drive infrequently or not at all? In the case of the Newaukum Site, accessed by a busy State Hwy 508, you would have to pull off the highway (dangerous), cross ditches and a wide grass easement to read the sign, if you actually could see it traveling 55 miles an hour. In order to safely read it you would have to trespass on private property.

Additionally, publishing in a small, local newspaper (now in hard copy only three days a week) one time is also inadequate.

Note that WAC 173-308-310 (13) Public notice and comment period -“Public notices

and comment periods must minimally meet the requirements listed in this subsection". In light of FMF current and past poor relationships with neighbors, "minimally" meeting the public notice requirements is not enough and is a failure on the part of DOE.

REQUIREMENTS

DOE staff should maintain the Interested Parties list for each site and handle the notification of interested parties. The list should automatically include all adjacent and across the street property owners on all site borders and residents bordering the rural roads leading to the site (which will be seriously impacted by the heavy industrial type traffic of tankers and 18 wheeler truck/trailer biosolids delivery vehicles). This addition to the list is a simple, one time effort entailing looking up addresses by parcel number and addressing notifications to "Resident". FMF should be required to pay for any DOE staff time and postage required to create and maintain this list and send notices.

Response to I-32-8

Ecology is deeply committed to public involvement and we do our best within the limits of the law to ensure that permittees inform neighbors about upcoming actions. Public notice for the proposed biosolids land application site met the requirements of Chapter 173-308 WAC section 310 (13)²³ of the Biosolids Management Rule. According to the rule, the proponent (Fire Mountain Farms) issued a notice in a newspaper of general circulation in Lewis County, where they propose to land apply class B biosolids. This notice was published in the Chronicle on October 15th, 2020. Public comments were accepted by Ecology for 55 days, instead of the minimum of 30 days, following the issuance of newspaper notice until December 2nd, 2020. Ecology also held a virtual public meeting to inform the public of the proposal, and to receive public testimonies on November 18th, 2020. Additionally, notices of the hearing and public comment period were mailed to about 86 interested people by Fire Mountain farms and email notices were sent to about 11 interested people by Ecology. Fire Mountain Farms posted the physical public notice at the proposed application sites for the same 55 day period. Under the law, it is Fire Mountain Farm's responsibility to conduct public notice and send notification to members of their interested parties list, but Ecology does provide oversight to that process. It is Ecology's responsibility to send notification to members of the interested parties list when a change has been made to a permittee's permit coverage.

As per the rule, anyone who submitted a comment during this public comment period has been added to Fire Mountain Farm's Lewis county interested parties list by Ecology staff. The interested parties list is maintained by the proponent as per the biosolids rule, Chapter 173-308-310 (13) (g) (vii).²⁴ Everyone on Fire Mountain Farm's Lewis County interested party list will be notified when decisions or changes are made to the current proposal, as well as other changes to their permit occurring in Lewis county. We appreciate your feedback on how we can better reach residents and will take that into consideration in the future.

Comment I-32-9

B. COMMENTS -Additional ad More Stringent Requirements - Site Specific Conditions

1. Item #12 (d), Item #13 (b), Item #16 (b) "Steep Slopes"

Hydric soils, steep slopes and unmonitored application of biosolids dramatically increase the risk of runoff into and contamination of waterways and neighboring properties. Requiring a subjective (another conflict of interest situation) "reduced rate"

²³ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-310>

²⁴ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-310>

by the applier is unmeasurable and unenforceable.

REQUIREMENT

All fields on ALL sites with slopes greater than 8% must be excluded from biosolids application and permanently flagged by FMF.

Response to I-32-9

Ecology is confident that reducing application rates for fields with slopes greater than 15% will prevent surface water contamination. Application rates must already be sent to Ecology for regulatory oversight, at which point the rate request is evaluated for whether or not it is appropriate for the field and crop. If a rate is too high for a field with greater than 15% slopes, then the rate must be reduced before approval is granted and before land application of biosolids can begin. No change in the permit resulted from this comment.

Comment I-32-10

2. Item #12 (e) Spill Plan for transport between Burnt Ridge Site and Homestead Site.

REQUIREMENT

- 1) Add to Spill plan the transport from Burnt Ridge/Homestead sites to the Mill Creek site.
- 2) Add this requirement to all of the sites.

All travel between sites requires a spill plan. This one is specifically called out so FMF is aware that includes the short trip across the street between these two sites.

Response to I-32-10

Biosolids must always be cleaned up if it is tracked onto public roadways. A Spill Prevention and Response Plan (SPRP) must always be used whenever transporting biosolids. An additional condition is listed for the Burnt Ridge Unit to note that Burnt Ridge and Homestead are separate units, therefore the use of a SPRP is still required even when transporting biosolids across the street. If you see biosolids being tracked onto the roadway at any site, please contact the southwest regional biosolids coordinator immediately to report your observations.

Comment I-32-11

C. COMMENTS -SEPA Checklist

1. Page 22 (2) -Ground and Surface Waters

2) Could waste materials enter ground or surface waters? If so, generally describe' FMF Response for each site: "Big Hanaford Unit Washington State law now refers to biosolids as a valuable resource and regulates its use in a manner to protect human health and the environment, thus no waste materials are being discharged to the ground in this project..."

This response is nonsensical, inaccurate, insulting to the reader and indicates lazy and incomplete SEPA preparation by FMF.

REQUIREMENT

The DNS should be rescinded and a full Environmental Impact Study for each site must be conducted to determine impact on ground and surface waters at these sites.

Short of this, FMF should be required to hire an arm's length (approved by DOE) consultant to prepare a thorough analysis in order to answer this question as it is clear they are incapable of doing so.

Response to I-32-11

Biosolids are not classified as a solid waste as long as they meet the requirements for land application.

Additional and more stringent conditions are being required for Fire Mountain Farms in order to protect ground and surface waters. This includes limiting the application of biosolids to seasons with low precipitation. Fire Mountain Farms must also use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-32-12

2. Page 28 (a) and (c) -Wildlife Impact

5. Animals a. List any birds and other animals which have been observed on or near the site or are known to be on or near the sitte:

FMF response for each site: "birds: hawk, heron, eagle, songbirds mammals: deer, bear, elk, beaver, other: (coyote) fish: bass, salmon, trout"

c. Is the site part of a migration route? If so, explain.

FMF response for each site: "Several species of migrating birds pass through this area, yet the minimal amount of increased activity proposed on these sites should not restrict their use of these sites for stop over. Our site has had ponds constructed which are used by many migrating water birds."

COMMENT

If cattle (and humans) are restricted from biosolids-spread fields for 30 days, why is it safe for deer, elk and other mammals to have immediate access, if not actually be attracted by to the site by smells?

FMF seems to indicate that their biosolids containment ponds, which are polluted and pathologically active, are good places for migrating water birds to rest and refresh! How ironic.

REQUIREMENT

All fields should be fenced suitable to keep elk and deer out (8+ feet high) and all ponds and containment areas should be covered.

Response to I-32-12

Grazing restrictions are limited to domestic animals while the pathogens are further reduced by environmental factors like temperature, pH, moisture and UV radiation. The 30-day period is a conservative site restriction designed to protect livestock and the most highly exposed individuals. These restrictions are not required for wildlife because they are not confined to specific fields for grazing and thus they have less potential of coming into contact with and transporting pathogens.

Further, studies have shown that biosolids can be a useful tool for restoration by improving prey

availability for birds of prey in degraded habitats (Buers et al. 2019, Meineke 2020). Additionally, no adverse impacts have been shown on wildlife exposed to biosolids-treated soils, or to humans from trace elements found at the current concentrations in biosolids (Fuchsman et al 2010; Chaney et al 1996).

The containment pond at Burnt Ridge is in the process of having the delisted Emerald Kalama Chemical (EKC) waste removed from it. Land application of biosolids cannot begin at this unit until all delisted EKC waste has been removed from this location and a clean closure approval has been issued by Ecology. This containment pond has not been approved for future biosolids use at this time.

Buers, M., F.I. Doyle, K.J. Lawson, and K.E. Hodges. 2019. Effects of biosolids amendments on American Kestrel nest site selection and diet. Canadian Journal of Zoology 97: 1186–1194.

Chaney R.L., Ryan J.A. and G.A. O'Conner. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. The Science of the Total Environment 185:187-216.

Fuchsman P., Lyndall J., Bock M., Lauren D., Barber T., Leigh K., Perruchon E., and M. Capdevielle. 2010. Terrestrial ecological risk evaluation for triclosan in land-applied biosolids. Integrated Environmental Assessment and Management 6:408-418.

Meineke, J. 2020. Effects of biosolids on a grassland community of rodents and birds of prey in British Columbia. MSc, University of British Columbia Okanagan, Kelowna BC.

Comment I-32-13

3. Page 32 #7, Page 35 (5) -Environmental Health Hazards

7. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

FMF response for all five sites: "Potential pollutants in biosolids include nitrogen, metals, pathogens (disease causing organisms), and synthetic organic compounds. Potential pollutants are regulated and all sources will be within regulatory standards"

5) Proposed measures to reduce or control environmental health hazards, if any:

FMR response: "Humans are at little risk from biosolids-borne pathogens when biosolids are properly treated and handled"

These responses are disingenuous, patently false and misleading. The U.S.

Environmental Protection Agency - Office of Inspector General report (11.15.18) states:

"The EPA's controls over the land application of sewage sludge (biosolids) were incomplete or had

weaknesses and may not fully protect human health and the environment. The EPA consistently monitored biosolids for nine regulated pollutants. However, it lacked the data or risk assessment tools needed to make a determination on the safety of 352 pollutants found in biosolids. The EPA

identified these pollutants in a variety of studies from 1989 through 2015. Our analysis determined

that the 352 pollutants include 61 designated as acutely hazardous, hazardous or priority pollutants in other programs."

REQUIREMENT

This report and many other reputable studies should be disclosed in this (public

document) SEPA to provide a balanced FMF response.

Response to I-32-13

Report Number 19-P-00021 was prepared by the Office of the Inspector General (OIG) and represents that agency's assessment of Environmental Protection Agency's performance. The OIG report focused only on the presence of chemicals found in biosolids and did not consider their concentrations. This report does not make it clear to the reader that the occurrence of pollutants in biosolids does not necessarily mean that those pollutants pose a risk. As a result, a literature review was conducted by prominent scientists in conjunction with the USDA National Institute of Food and Agriculture which demonstrated that there is sufficient data and research available to show that biosolids regulations are protective of both human health and the environment (Basta et al 2020).

Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products.

We encourage you to read EPA's responses which are appended to the OIG report. We believe EPA has good reason to question several of the findings and recommendations of the OIG.

Basta N, I Pepper, LS Lee, G Kester, and A Zearlet. 2020. W4170 Multistate research committee response to USEPA OIG report NO. 19-P-0002. USDA National Institute of Food and Agriculture Research Committee W4170.

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

Comment I-32-14

4. Page 38 #2, Page 39 #3, Page 44 (L), Page 53-54 (f) - Traffic Impacts

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

FMF response for all five sites: Operation of typical agricultural equipment will create noise during normal operating hours All noise will be consistent with typical agricultural practices and the noises associated with those activities. {inaccurate, incomplete and misleading, see COMMENT below}

3) Proposed measures to reduce or control noise impacts, if any:

FMF response for all five sites: "None proposed other than normal exhaust mufflers on equipment."{inaccurate and misleading - see COMMENT below}

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

FMF response for all five sites: "Proposal will improve the economic viability of the current agricultural uses, providing added incentive to keep this land in natural resource production."{inaccurate, misleading and ignores residential zoning nearby - see COMMENT below}

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

FMF response for five sites: Typically, vehicle trips are seasonal and project based (not continuous). Typically, up to est. 8 weeks activity, 1-3 times per season, 1 -10 trucks per day ,As an exception, it is possible to have a larger number of trucks per day (for liquid applications) for a short period of time. , Passenger/Service Vehicles- 1-10 trips per day during land application Biosolids put in to storage would will be 1 to 5 trucks per week out side of normal application season.

COMMENT

1. Page 53 -54 (f) Using FMF's estimates, a range of 30 to 1200 tanker/18 wheeler truck/trailer trips will occur at each site over a 7-8 month period multiplied by two passes (up and back) for a total of 60 -2400 "tanker/18 wheeler truck passes"by rural road residences . FMR estimates an additional 30 -1200 support vehicle (typically pick-up trucks) trips multiplied by two passes (up and back) for a total of 60 -2400 "pick-up truck passes"by rural road residences.

These are horrific numbers, rivaling what industrial parks would experience. These large, heavy 18 wheeler truck/trailer combos and tankers (most likely weighing over 80,000 lbs.) will be traveling on narrow, rural roads without shoulders or sidewalks, bordered by deep drainage ditches and lined with residences. This is far more traffic than a typical seasonal hay farmer or a single event forestry activity would generate and is a danger to children, pedestrians, commuters, cyclists, horseback riders and wildlife.

The noise and diesel fumes will be excessive and inconsistent with rural life.

Keep in mind that one access road (Burnt Ridge Road) will handle TWO of these sites PLUS the currently permitted Mill Creek site to create an untenable traffic situation for this rural road lined with 80 homes. The approximately 7 miles this traffic will travel includes two 18% grades requiring low gear diesel fume spewing travel, two sharp, blind 90 degree turns, at least 3 blind curves and multiple blind hills. Many residents' driveways have impaired traffic views -these are serious accidents waiting to happen.

Calculating the total number of "passes"for Burnt Ridge Road for the three sites this road would serve produces staggering results -180 -7,200 tanker/18 wheeler/trailer passes plus 180 -7,200 pick-up truck passes per 7 -8 month season, year after year. I have personally experienced this traffic pre-2014 on Burnt Ridge Road and believe it to be highly unsuitable and dangerous, dramatically increasing the chances of a major spill, traffic accidents, rural road damage (unreimbursed by FMF to the county) and is a threat to human life. This represents a significant liability for DOE and the County and cannot be permitted.

REQUIREMENT

1) Total FMF traffic to be limited to a total of 30 tanker/18 wheeler truck trips and 30 pick- up/car support vehicle trips per rural access road per year. DOE (not FMF) to determine monitoring method and undertake such monitoring with FMF to pay the cost.

An "honor system" is not appropriate or advisable here based on FMF's checkered past in following regulations.

2. "Jake brake" usage is not allowed.

3. A plan for dripping tanker (which I have personally seen) reporting and immediate clean up to be required.

4. No deliveries pre-school hours (9:00am) and after school recess hours (2:30 pm).

The following are photos of typical biosolids transportation trucks/tankers and actual accidents delivering biosolids taken from a presentation by King County Wastewater Treatment.

Response to I-32-14

Your comment has been noted. The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

Ecology requires a Spill Prevention and Response Plan when biosolids are being transported over the public roadway so that appropriate action can be taken in case of a spill. Action includes engaging in spill prevention measures to prevent a spill from occurring. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard.

Comment I-32-15

5. Page 51-52 #13 (b) (c) 13 - Historic and cultural preservation

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

FMF response for all five sites: "None"

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

FMF response for all five sites "Discussions with long time property owners."

COMMENT

FMF has clearly not conducted any professional studies, nor consulted tribes, etc. This section is incomplete and an insult to our tribal communities.

REQUIREMENT

FMF to hire a consultant to conduct studies as to tribal cultural history of each site.

Response to I-32-15

Thank you for expressing your concern. We did not receive comments from tribal entities concerned about cultural artifacts on these sites. Generally, the need to hire a consultant is only

triggered when a tribal entity makes a request that we do so or when potential artifacts are found.

Comment I-32-16

Issue: Incomplete Minimum Content for a Site Specific Land

Application Plan

WAC 173-308-90003 Appendix 3 -Minimum content for a Site Specific Land

Application Plan

(6) Provisions for conducting any sampling of soils, surface waters, or groundwater and any available data collected from the site within the last two years. NOT PROVIDED

(9) Map(s) for the site(s) must be submitted (9) (e) & (m) wetlands and Critical Areas to be shown on maps:

The following required information is not shown in Maps Section, indicating at best, sloppy work or a desire to hide information that could be viewed as negative to the permit application.

Lincoln Creek Site Specific Land Application

Site Addresses (General Location) is stated as 1688 and 2240 Lincoln Creek Road, Centralia, WA leading one to believe that the properties located across the street from the site (owned by Snyders) is also a location where it will be spread. NOT ACCURATE!

2) 2240 Lincoln Creek Road is at least 12 parcels away from the site. Change to 1827 Lincoln Creek Road

Burnt Ridge Site Specific Land Application

Maps do not indicate Critical Aquifer Recharge Area (Category 1) or Critical Aquifer Recharge Areas Soils Category 3, watersheds or hydric soils.

Homestead Site Specific Land Application

Maps do not indicate Critical Aquifer Recharge Areas, watersheds, or hydric soils.

Newaukum Site Specific Land Application

Maps do not show wetlands, which make up about 1/3 of the property.

(j) The location of any wells located on or within one-quarter mile (402 meters) of the site that are listed in public records or otherwise known to the applicant, whether for domestic, irrigation, or other purposes. NOT PROVIDED

Response to I-32-16

Thank you for your careful review of this application. Data from soils, surface waters and groundwater are only required if they have been collected within the previous two years, which was not the case for these sites. Maps for wetlands and critical areas have been collected from Fire Mountain Farms and added to their permit application. And last, biosolids application can only occur on the parcels listed in the Site Specific Land Application Plans and the SEPA checklist. None of the parcels from 2240 Lincoln Creek Rd were included in either document so land application of biosolids is not being permitted at that address at this time.

In some cases, wetlands have long been used for agricultural production. Ongoing agriculture in these areas is exempt under state and federal wetland protection statutes. We recognize that these wetland areas may continue to be farmed under state wetland protection statutes. Even though they are in production, farmed wetlands can continue to provide important wetland functions such as waterfowl migration or overwintering areas. Use of best management practices and conservation practices can help enhance these functions while complementing ongoing farming operations.

The required management practices for these sites was reviewed by an Ecology Wetlands Specialist who confirmed the additional requirements added to manage these Lewis County sites will be sufficient to protect surface and groundwater because the wetlands won't be hydrologically connected during times of biosolids application.

Comment I-32-17

Issue: Statements in Site Specific Land Application Plans

9.3 Verifying the Application Rate

FMF response: When applying biosolids, application rates are calculated in gallons per acre for both dewatered and liquid applications. For dewatered biosolids, each application unit is assigned a volume, and the number of loads per field is determined. Depending on which applicator is being used, the correct area will be covered by varying speed and width of spread. The typical application rate procedure works like this: the supervisor determines rate and maximum number of loads for a field. This is entered on the "Application Report" and the report is given to the operator. For liquid applications, a determination of the number of dry tons required is calculated. Then, using the percent total solids of the biosolids, the gallons per acre can be determined. The percent total solids will be checked periodically (example Sartorius MA35), it can also be done with a microwave and a scale) and an adjustment to the agronomic rate will be made if needed. When using the drag-hose system, flow rate & speed + implement width is used to calculate actual application rate. Speed and flow rate can be adjusted to hit target application rate. Flow rate will be determined using a flow meter. In the event the flow meter fails we will calculate application rate using line pressure and hose size. All this information is recorded on the "Liquid Application Report" located in Appendix 6.B of this plan.

COMMENT

- a) There is actually no verification involved here -all subjective guessing by a "supervisor" whose experience and education level is not described or regulated. My guess is that no one is calculating "flow rate & speed +implement width" or using a "flow meter" before or during application. In light of FMF's checkered DOE history, a more verifiable application method and monthly reporting needs to be implemented and paid for by FMF.
- b) When are "Application Reports" reviewed by DOE staff? They should be submitted and reviewed by staff on a monthly basis.

Response to I-32-17

All biosolids applications must be applied at an agronomic rate, which is based on how much nitrogen is needed for optimal crop growth. An agronomic rate can include nitrogen from other sources, like manure, which are subtracted from the overall rate allowed for biosolids. This protects groundwater from the risk of nitrate contamination. Agronomic rates must be sent to the biosolids coordinator for evaluation before land application of biosolids can begin. Soil samples are collected and analyzed at the end of the application season to confirm that biosolids were applied at the correct rate. For clarification Ecology does not apply biosolids, we give permits to farmers who want to apply biosolids within the framework of the law and ensure that these permittees follow the law.

The biosolids land applier submits their application records annually with their Annual Biosolids Report which is generally due by March 1st of each year.

Comment I-32-18

10.2 Biosolids Sampling and Analysis

FMF response: Documenting that biosolids meet the standards for land application in WAC 173-308 is performed by either the biosolids generator (e.g. wastewater treatment plant) or by Fire Mountain Farms, Inc. If biosolids quality is changed by Fire Mountain Farms after receipt through the process of blending multiple biosolids sources, Fire Mountain Farms will follow Ecology's Policy on Mixing Different Non-Exceptional Quality Biosolids-2008. A sampling and analysis plan detailing the procedures for the collection of biosolids samples may be found in Appendix 8B of this plan. For a detailed description of sampling procedures, please see the Sampling and Analysis Plan (May be submitted later if approved to mix biosolids sources in the future) located in Appendix 8B of this plan.

- a) Does this permit application allow FMF blending of multiple biosolids sources?
- b) In light of FMF's checkered DOE history, allowing blending of sources and unmonitored, self-testing of the resulting mix does not seem prudent and should not be allowed.

Response to I-32-18

At this time, there is no long-term storage allowed at any of these Lewis County sites, therefore they are not permitted to blend multiple biosolids sources at this time. If Fire Mountain Farms would like to add long term storage and the option to mix multiple biosolids sources in the future they will have to undergo another SEPA evaluation and public notice process. At that time there will be evaluation of whether non-biosolids sources should be allowed in blending and if so what regulatory oversight would be required to prevent the re-occurrence of past infractions.

Comment I-32-19

10.4 Trace Elements

FMF response: At a minimum, biosolids land applied at the site, must meet the Ceiling Concentration Limits for pollutants found in Table 1 of WAC 173-308-160 (1).²⁵ It is a policy of Fire Mountain Farms to only accept biosolids that meet the Pollutant Concentration Limit found in Table 3 of WAC 173-308-160 (3).²⁶

- a) Table 3 lists "Limit monthly average in milligrams per kilogram (dry weight basis)" Does this mean that monthly tests are conducted, then averaged?

Monthly soil tests should be required and paid for by FMF.

- b) DOE staff indicated that soil tests were only taken in the fall. What is to prevent FMF from grossly over-applying at any one time, risking wildlife, neighbors' health and surface and groundwater quality?

Monthly soil tests should be required and paid for by FMF.

Response to I-32-19

The Table 3 Pollutant Concentration Limits listed in WAC 173-308-160²⁷ are requirements that need to be met by the producers of biosolids. The requirements for how often pollutants need to be tested are dependent on the number of dry tons that facility produces throughout the year (WAC 173-308-150).²⁸ Only the largest facilities, which produce greater than 16,535 dry tons of

²⁵ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-160>

²⁶ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-150>

²⁷ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-160>

²⁸ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-150>

biosolids per year are required to sample once per month. In some cases, facilities voluntarily sample more than once per month. Only in that last scenario would there be a monthly average of the pollutant concentrations in the biosolids.

Nitrate is a soluble compound, but there is only a risk of leaching if the soil becomes saturated with water. Excess nitrate will accumulate in the soil over the course of the application season and there is generally not enough rain in March through September to leach nitrate before soil samples are collected. If over-application happens at any point during the application season, evidence will be captured in the fall soil sampling. There is no additional regulatory benefit to requiring monthly soil sampling because excess nitrate accumulates without a sufficient water source to wash it away and there is no irrigation proposed for the permitted fields. Additionally, if Fire Mountain Farms applies an additional nutrient source to their fields after the fall sampling has been conducted they will also be required to sample those fields in the spring to determine if there is an crop need for additional nitrogen.

Comment I-32-20

SUMMARY

- 1) The SEPA application submitted by FMF is a flawed document and unsuitable as a basis for a Determination of Nonsignificance by DOE.
- 2) These permits should be denied by DOE due to the inappropriate nature off all five sites (wetlands, flood plains, salmon stream exposure, steep slopes, runoff risk, hydric soils, etc.) and known, unregulated/untested risks from biosolids to human health (with residences close by and excessive traffic expected on rural residential roads).
- 3) Short of denial, an Environmental Impact Statement should be prepared for each site by third party consultants (paid for by FMF) to fully identify the risks.
4. If FMF's application is approved, the above actions I have suggested should be incorporated into the Additional and More Stringent Requirements prepared by DOE.
5. FMF's decades long history of poor regulatory compliance and poor neighbor relations should be the basis for levying additional FMF fees/penalties (per RCW 70A.226.080 Violations, "Monetary penalty") to cover any costs for additional DOE surveillance, Interested Party List maintenance/contacting, and third party testing/consultation.

It is unfathomable that FMF was not given a significant monetary penalty after almost 20 years of illegally spreading listed hazardous waste on these sites. The fact that it took close to 14 years for DOE to discover this, points to the failures of the current monitoring/testing procedures based on the "honor system" when significant financial profit as an applier creates a serious conflict of interest. During these times of State budgetary constraints, taxpayers should not pay for the necessary extra FMF monitoring costs brought about by FMF's willful transgressions. FMF should be made to pay for these extra monitoring costs. DOE has far more important uses of the valuable staff time and our taxpayer monies.

6. DOE needs to implement additional (at FMF's cost) third party oversight measures to ensure FMF never again mixes non-permitted waste with permitted biosolids.

Thank you for honoring the time it took to prepare this in-depth commentary by carefully considering my suggestions.

Sincerely,
Kay Crawford

Response to I-32-20

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)²⁹ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).³⁰

Formal enforcement is one of many compliance tools available and may not be necessary to achieve compliance in every case. Technical assistance, partnerships with affected groups, and education are also key tools in achieving compliance. Formal enforcement is used when appropriate. Ecology uses the Biosolids Enforcement Guidelines for the Solid Waste Management Program as a guidance document to determine appropriate responses to incidents of non-compliance. It does not prescribe precisely what action or actions should be taken in each case, as each incident of non-compliance can be different. Therefore this document is intended to provide a useful tool to Ecology personnel which maintains maximum flexibility to deal with each individual incident. All regulated facilities and entities are expected to comply with biosolids management laws and regulations. Ecology strives to ensure that all facilities and entities know the legal requirements and how to comply with the law. If an enforcement action is necessary, Ecology will ensure that the action is clearly defined and consistent with the magnitude of the violation. Compliance with biosolids laws and regulations is critical for the protection of human health and the environment.

²⁹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

³⁰ <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C.030>

Ecology has learned from past oversight mistakes and now requires Fire Mountain Farms to report all nutrient sources applied to permitted fields. If other nutrient sources are used they are factored into the biosolids agronomic rate which will reduce the amount of biosolids that can be applied to that field. Additionally, if a nutrient source requires permitting by another entity, Ecology will require additional information to confirm that that source is up to date on permitting requirements.

I-33: Henry Roberts

Comment I-33-1

I spent most of my management career in the trucking industry and know it pretty well. Our rural roads were never meant to handle the steady flow of tankers, and 18 -wheel trailers that go up and down delivering biosolids for months at a time during “sludge season”. These big tanker loads can weigh 80,000 lbs. or more with a full load and don’t stop on a dime!

Most of the access roads to these five sites under review are narrow, without shoulders, turn lanes or sidewalks. Most have deep drainage ditches on either side, multiple hairpin turns and blind hills where families exit their driveways. Dodging these trucks is a danger for children, pedestrians, cyclists, horseback riders, family pets and wildlife.

I understand that rural roads here will have seasonal and occasional agricultural vehicles accessing farms fields and sporadic logging trucks when properties are cleared. But these are infrequent trips and are within a limited time span. Fire Mountain Farms’ biosolids delivery tankers from waste treatment plants, field application equipment and support trucks run seemingly non-stop from April through October, year after year. The noise, diesel fumes, wear and tear to our roads and traffic danger to our families is far more than a “normal” hay or cattle farmer would generate for the same amount of acreage farmed. How does Fire Mountain Farms compensate Lewis County for the road damage it causes?

In addition, there is the real risk that these large tankers and trucks overturn and dump their loads on our rural roads and into our drainage ditches that feed our streams. A safety slide show presentation by Seattle Solid waste shows three instances where biosolids tankers have overturned in the past five years.

I respectfully request that the Department of Ecology limit the number of tanker trips delivering biosolids to Fire Mountain Farms per month and require them to use smaller delivery vehicles. In addition, Dept. of Ecology should require that Fire Mountain Farms pay to create an independent monitoring system to assure they do.

Thank you. Henry Roberts

Response to I-33-1

Your comment has been noted. The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the

site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

Ecology requires a Spill Prevention and Response Plan when biosolids are being transported over the public roadway so that appropriate action can be taken in case of a spill. Action includes engaging in spill prevention measures to prevent a spill from occurring. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard.

I-34: Richard Decker

Comment I-34-1

I have 2 concerns about this permit: (1) the water runoff from Thode's fields will feed directly into the creek which runs through my property. This creek is classified as a "fish" creek. What effect will this runoff have on the fish and wildlife of this creek?

Response to I-34-1

In order to protect ground and surface waters and the organisms that live in them, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Following these requirements will prevent biosolids from being applied when there is a risk of surface runoff.

Comment I-34-2

(2) The truck traffic on Burnt Ridge Rd. will have a negative effect on the quality of the pavement and the noise and traffic level. Why cannot the trucks use Hwy 508 and Johnson Rd instead of Burnt Ridge Rd?

Response to I-34-2

These sites are located on Burnt Ridge Road. While trucks will likely use Hwy 508 and Jorgenson Rd for a majority of the transport, Burnt Ridge Rd will need to be accessed to deliver biosolids to their final destination at these permitted sites.

I-35: Olivia Stone

Comment I-35-1

I am very concerned about the use of biosolids at Firemountain Farm on Burnt Ridge. I understand that in the past Firemountain has spread contaminated biosolids. Who would monitor them in the future?

Response to I-35-1

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes community member complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

Comment I-35-2

No one from FireMountain or the EPA or any other organization has tested our well water or asked if we wanted it tested.

Response to I-35-2

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy and Loyo-Rosales 2015).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels will help guard against groundwater pollution.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and limiting the application window to the drier parts of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water. Buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and

the state regulation (Chapter 173-308 WAC),³¹ Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require monitoring of offsite wells.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Brobst B. The Environmental Protection Agency. Biosolids Reference Sheet. EPA Region VIII.

Comment I-35-3

I am also concerned about the damage to the road. This is a two lane road and in my opinion is not suitable for multiple daily trips by tanker trucks. The risk of a tanker truck accident causing spills either on the road or contaminating private property is another concern. The danger of a collision with private cars entering the road from driveways with poor visibility, collisions with pedestrians who often walk dogs, children on bicycles and ATVs (this is an ATV route) is a further concern. The local school district bus makes many stops on this road, yet another opportunity for an accident. There are often deer crossing the road which can cause an accident.

Response to I-35-3

The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

Ecology requires a Spill Prevention and Response Plan when biosolids are being transported over the public roadway so that appropriate action can be taken in case of a spill. Action includes engaging in spill prevention measures to prevent a spill from occurring. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard.

I-36: Christy Tayloe

Comment I-36-1

Attn: Peter Lyon, Laura Watson, Shawnte Greenway, Laurie Davies, and all other interested parties.

This note is to summarize why the DNS for the FMF application of class B biosolids should be removed, and the permit should not be granted. Short of denying a permit for each of the five inappropriate sites, an Environmental Impact Statement (EIS) should, without question, be required for each site. I have numbered the talking points below to ease the comment response.

³¹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

1. Firstly, the above mentioned DNS is based solely on FMF's provided information including the SEPA checklist. The information in that checklist has not been verified by you or any other third party not affiliated with FMF. Any information provided by FMF will clearly be biased in their favor and should not be used to determine anything at all, certainly not the health and well-being of your community and environment.

That Ecology, "has determined that this proposal will not have a probable significant adverse impact on the environment" is absurd. Below I will point out many reasons why. That an environmental impact statement (EIS) is not required under RCW43.21C.030(2)(c) is also totally unacceptable. That determination is based solely on information provided by FMF, which is lacking in proof of statements therein, and completely false in others. As stated in WAC 197-11-340, (3)(a)(ii), "The lead agency shall withdraw a DNS if: There is significant new information indicating, or on, a proposal's probable significant adverse environmental impacts." Also, "The DNS was procured by misrepresentation or lack of material disclosure; if such DNS resulted from the action of an applicant, any subsequent environmental checklist on the proposal shall be prepared directly by the lead agency or it's consultant at the expense of the applicant."

Response to I-36-1

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)³² and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel. Additionally, Ecology added clarifications to the SEPA checklist provided by Fire Mountain Farms where information was unclear or insufficient.

After careful consideration of the proposal, Ecology determined that the likelihood and significance of an impact occurring from this activity is low.

Comment I-36-2

2. You will see in the attached photo, and it is stated in the SEPA checklist, that a critical aquifer recharge exists on the Burnt Ridge Site. This aquifer contains a creek that runs down Burnt Ridge, about 20 feet from the back of my property line, ultimately down to the Cowlitz hatchery. Clearly, the aquifer will be tainted with the application on this site. The above mentioned creek is not dry from March to October, and will be running water as described above. I know that there is a required boundary from creeks and rivers with application of biosolids, but the only people that can easily see that creek and aquifer are the Thode's. Ecology is unable to ensure that pollution from biosolids will not affect this aquifer and creek, hence, there will be probable significant adverse impact on the environment. This statement also pertains to the Lincoln creek and Hanaford creek sites as well, which will most certainly be adversely affected by biosolids applications.

³² <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Response to I-36-2

In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources. Additional protection is present in the Groundwater Protection Plan, which is located in the Site Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface. Following all these requirements will prevent biosolids from entering groundwater or surface water.

Comment I-36-3

3. The wildlife that traverses the Burnt Ridge Unit and Homestead sites is abundant. I have pictures and videos of deer and elk jumping the fences from both of these sites onto my land, and of the bald eagles trying to fish in the pond on the Homestead site, along with the numerous migrating geese, and the pair of Trumpeter Swans I have recently seen there as well. The coyotes do the same, and come right up to my house. I hear owls regularly, and I am unable to determine if they are Northern Spotted Owls. Migrating geese will carry the biosolids across the land to unknown destinations.

FMF is unable to determine the potential presence of the spotted owl, though they state that the closest one is 4.5 miles away, and that WA FW was contacted and that documented habitats are not at these sites. There is no proof of this.

It is undeniable that the wildlife will track biosolids onto my land, where pets and children play. Where my livestock grazes. The livestock that I touch on a daily basis. Thus, there is probable significant adverse environmental impact, relating to the wildlife, including Northern Spotted Owl habitat, and humans. And as the mission of Washington Department of Ecology is to, "Protect, preserve, and enhance the environment for current and future generations," it is the duty of said department to revoke the DNS and to deny the general biosolids permit for FMF.

Response to I-36-3

Grazing restrictions are limited to domestic animals while the pathogens are further reduced by environmental factors like temperature, pH, moisture and UV radiation. The 30-day period is a conservative site restriction designed to protect livestock and the most highly exposed individuals. These restrictions are not required for wildlife because they are not confined to specific fields for grazing and thus they have less potential of coming into contact with and transporting pathogens.

Further, studies have shown that biosolids can be a useful tool for restoration by improving prey availability for birds of prey in degraded habitats (Buers et al. 2019, Meineke 2020). Additionally, no adverse impacts have been shown on wildlife exposed to biosolids-treated soils, or to

humans from trace elements found at the current concentrations in biosolids (Fuchsman et al 2010; Chaney et al 1996).

Ecology received documentation provided by Washington Fish and Wildlife that confirmed the Burnt Ridge and Homestead Units are outside of known spotted owl habitat. A map of the exact locations of spotted owl habitat was not formally included in this proposal as a protection measure for this state-listed endangered species to prevent potential habitat destruction and vandalism.

Buers, M., F.I. Doyle, K.J. Lawson, and K.E. Hodges. 2019. Effects of biosolids amendments on American Kestrel nest site selection and diet. Canadian Journal of Zoology 97: 1186–1194.

Chaney R.L., Ryan J.A. and G.A. O'Conner. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. The Science of the Total Environment 185:187-216.

Fuchsman P., Lyndall J., Bock M., Lauren D., Barber T., Leigh K., Perruchon E., and M. Capdevielle. 2010. Terrestrial ecological risk evaluation for triclosan in land-applied biosolids. Integrated Environmental Assessment and Management 6:408-418.

Meineke, J. 2020. Effects of biosolids on a grassland community of rodents and birds of prey in British Columbia. MSc, University of British Columbia Okanagan, Kelowna BC.

Comment I-36-4

4. It is stated in the SEPA checklist that erosion is unlikely at the Burnt Ridge and Homestead sites. This is absolutely false. Three years ago I could run my lawnmower right up to the fence line that I share with the Burnt Ridge Unit. Now, the ground has eroded down so that I can no longer get the lawnmower to the fence line. That is erosion. In the SEPA checklist, FMF states that, "No indications of unstable soil have been found on this site during our investigations, nor have any unstable soils been known to be present by those now managing the farm." This is false, and this is, "misrepresentation or lack of material disclosure.."

And to claim that erosion will be decreased due to the application of biosolids increasing the ability of the ground to absorb does nothing to generally address the runoff of the biosolids down the steep grades onto my land. It absolutely rains here, and FMF is no better at determining the likelihood of rainfall as a meteorologist. So if a professional cannot predict the rainfall, how exactly do you expect FMF to do just that, so that it doesn't runoff down the hill onto my land? I have watched their spreading truck shooting it through the air at the top of the hill in the rain and in the same spot for over ten minutes at a time.

Response to I-36-4

The question asked in the SEPA checklist is "Could erosion occur as a result of clearing, construction, or use?" This question is asking if erosion will occur as a result of the proposed project. There is what appears to be regular erosion occurring due to the presence of steep slopes on some of the Burnt Ridge fields. The use of biosolids has been shown to increase organic matter in the soil surface, which reduces erosion. This is because soil aggregates are less likely to break down into smaller particles that can be carried away by water or wind. Additionally, the added organic matter increases moisture retention, which also decreases soil erosion, as well as decreasing surface water runoff. The application of biosolids to the Burnt Ridge unit will not cause additional erosion.

Please refer to the response provided to your comment I-36-2 for more information on the biosolids management requirements in place to prevent surface runoff from occurring.

Comment I-36-5

5. That brings me to exactly what FMF was spreading last year. You stated that it was class A biosolids. As per Ryan and Martha Thode, it was the liquids that were present in their pits (yes, the present hazardous pits), that they applied. They both explained to me that they were allowed to spread the liquid precipitate, but not the solids underneath. The liquid precipitated from the solids underneath, which certainly didn't mix at all when sticking a big suction hose in it! I measured; they spread it right up to and on the fence line at the Homestead Site which is 38 feet from my mailbox, where I was standing one day. So, they were spreading the sewage waste 38 feet from my body while I was checking my mail. I subsequently vomited when I made it back to my car port. Days went by where I could barely stay outside long enough to just care for my livestock. Which brings me to my next point:

Response to I-36-5

I apologize for misunderstanding your question over the phone. It sounds like you are curious about how Fire Mountain Farms got permission to land apply the liquid in their lagoons before it had been delisted to solids waste by Ecology and the EPA. Emerald Kalama Chemical requested a "Contained-In Determination" from Ecology, which is a request to dispose of soil or water that contains a listed dangerous waste below risk-based levels. In this case, the request was to remove the water added to the lagoon from precipitation (rain and snow) to prevent the lagoon from overflowing. Ecology approved several requests for "contained-in determination" for the precipitation that was suspended above the solids in the Burnt Ridge and Newaukum Prairie lagoons because the results of sampling showed that the benzene and toluene listed in the water was below risk-based levels.

A pump was floated near the surface of the water to prevent any solids from being extracted while the precipitation was removed. The water was sampled for Total Suspended Solids for every 1 foot of water that was removed from the lagoon. This was to ensure that only precipitation was being removed from the lagoon and not the solids. The purpose of land applying the precipitation that entered the lagoons was to maintain the necessary 24 inches of freeboard in the lagoons to prevent overflow.

Comment I-36-6

6. "Odors" are particulates in the air that you are inhaling, not just obnoxious smells. As stated by The National Institute for Occupational Safety and Health in regards to workers exposed to class B biosolids during and after field application, "the presence of enteric bacteria in air samples confirms the potential for workers to be exposed to organisms which have been associated with gastrointestinal symptoms and illness." I choose not to be an employee spreading biosolids, and I sure hope that FMF's employees are educated in the risks, but why is Ecology permitting FMF to expose the community? Isn't it Ecology's duty to protect the environment, which includes the humans existing therein? This represents a probable significant adverse impact to the environment.

Response to I-36-6

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in

communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-36-7

The USGS - Environmental Health - Toxic Substances Hydrology Program did the first comprehensive study (this is from back in 2006), that found that numerous chemicals were present in every biosolids sample including compounds that are pharmaceutically and hormonally active, indicating that biosolids have high concentrations of contaminants. The EPA states, "...the agency cannot determine whether biosolids pollutants with incomplete risk assessments are safe. The EPA's website, public documents and biosolids labels do not explain the full spectrum of pollutants in biosolids and the uncertainty regarding their safety. Consequently, the biosolids program is at risk of not achieving its goal to protect public health and the environment." So, clearly, there is probable significant adverse impact to the environment if the DNS for FMF's application is upheld, and they are allowed to spread biosolids in our community.

Response to I-36-7

Please remember that the presence of chemicals does not automatically equal a risk to human health or the environment. Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (*Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996*). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products. All of these household products end up in our wastewater system after being flushed or drained from our personal residences.

If a chemical ends up in biosolids we know that it has properties that bind it to the solids (otherwise it would have remained with the liquids, i.e. wastewater effluent). This means that chemicals present in biosolids are not readily water-soluble and therefore, unlikely to leach after

land application. Biosolids are land applied at agronomic rates based on the nutrient needs of the crop being grown. When applied to the soil, physical and chemical processes occurring within the soil break down a lot of chemicals. The U.S. Environmental Protection Agency (USEPA), other federal agencies, and universities have and continue to conduct research on the potential risks of trace chemicals in biosolids. Given the information currently available, Ecology continues to think Federal (40 CFR Part 503) and Washington (Chapter 173-308 WAC) regulations for biosolids management protect human and environmental health.

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

Comment I-36-8

7. FMF has repeatedly violated the rules and has not been held accountable for their actions. Their entire Burnt Ridge Unit sludge pit broke and flooded down the hill and all the way to the Cowlitz a number of years ago. In a separate event, in 2004, they flooded what is now my home and well with tons of the mixed material including hazardous waste. They overturned a truck into a creek a number of years ago. They have tracked the material onto the road, while cracking the road, right in front of my mailbox.

They have repeatedly shown that they are incapable of responsible environmental stewardship. And the statement made at the hearing that Ryan, not Bob is running the show now is irrelevant! Ryan learned everything he knows from Bob.

Why did Ecology not levy a fine for close to twenty years, having the right to penalize up to \$5,000/day for each infraction per RCW 70A.226.080? What this states is, "In addition to any other penalty provided by law, a person who violates this chapter or rules or orders adopted or issued pursuant to it shall be subject to a penalty in an amount of up to five thousand dollars a day for each violation. Each violation shall be a separate violation. In the case of a continuing violation, each day of violation is a separate violation. An act of commission or omission that procures, aids, or abets in the violation shall be considered a violation under this section."

Ecology has proven that it will not hold FMF responsible for violations. Deliberately poisoning our environment and suffering no consequences aside from not being allowed to continue poisoning is appalling. If a murderer finishes his jail time, he doesn't get to own another gun to continue breaking the law.

Ecology is clearly unable to adequately regulate the permits that it approves. Without the budget and subsequent manpower needed to ensure that the rules are followed, Ecology cannot in good faith issue a permit with rules that it cannot adequately enforce. Because of this, increased risk of probable adverse impact to the environment is present, and the DNS should be revoked and permit not granted.

Response to I-36-8

Thank you for bringing forward your concerns. Formal enforcement is one of many compliance tools available and may not be necessary to achieve compliance in every case. Technical assistance, partnerships with affected groups, and education are also key tools in achieving

compliance. Formal enforcement is used when appropriate. Ecology uses the Biosolids Enforcement Guidelines for the Solid Waste Management Program as a guidance document to determining appropriate responses to incidents of non-compliance. It does not prescribe precisely what action or actions should be taken in each case, as each incident of non-compliance can be different. Therefore this document is intended to provide a useful tool to Ecology personnel which maintains maximum flexibility to deal with each individual incident. All regulated facilities and entities are expected to comply with biosolids management laws and regulations. Ecology strives to ensure that all facilities and entities know the legal requirements and how to comply with the law. If an enforcement action is necessary, Ecology will ensure that the action is clearly defined and consistent with the magnitude of the violation. Compliance with biosolids laws and regulations is critical for the protection of human health and the environment.

Comment I-36-9

8. On a more personal note, I will write as an adjacent neighbor to the Thode family. My family and I have lived on this property for three years now. We are friendly with the neighbors, and have had many long talks.

Per Martha Thode, both Martha and Bob Thode are undergoing chemotherapy right now for GI tract cancer, both of them simultaneously. It is highly unlikely that it's pure coincidence that this is occurring. As you hopefully know, the initial clinical signs of exposure to biosolids are GI tract in nature.

Another neighbor on Burnt Ridge Road, Walter Chandler, used to help me around the home and farm. He stopped one of FMF's hired hands one day, right on my fence line as the only entry for the sewage trucks to the lowest back field is through a gate connected to our shared fence line, which is 20 feet from my well, and inquired of him how he was spreading it when FMF had lost it's permit. The next day, he and I were visiting in my car port, and Martha came down through her field on her quad and said hello to me and that she wanted to talk to Walt. I then backed off around the corner to let the two of them talk. Amongst other things, Martha said to Walt, "I can spray it into her car port if I want to because I am grandfathered in and you couldn't stop me!" Walt was a hunter, and he hunted the land down the ridge below the Burnt Ridge and Homestead Units, which until recently was managed by American Forest Management, and hunting was permitted. He told me stories of how he trudged through thick biosolids in the woods, where the creek runs to salmon streams. He said multiple years it was so thick that he couldn't see his feet.

Walt died last year of metastatic pancreatic cancer, a GI tract cancer.

Ted Trulson, also below the Burnt Ridge Unit, and on the dead end road below FMF, has watched numerous trucks full of biosolids drive down to 723 Johnson Road to dump on that land. That land was never permitted, but they did Bob Thode a favor for years giving him some place to spread it.

One year, the sludge pit on the Burnt Ridge Unit broke, and the contents, the unknown tonnage of biosolids, washed down the ridge, and flooded Ted Trulson's pond. It literally flooded out the fish, then went on down to the salmon streams. He complained to the Thodes' about it, and nothing was done. He didn't call the county to report it. What is the point of calling the county if Ecology is so biased, and at that time having the rule breaker himself, Bob Thode, on the committee to write the rules, if nothing will be done. When the biosolids were spilled on what is now my property, nothing was done, even though Ecology was fully aware that it had flooded over the water well. It is clear that Ecology does not take the complaints from neighbors seriously, that there is bias against any person that challenges FMF, and because of this, Ecology is unable to properly regulate the spreading of class B biosolids. Because of this, there is a high likelihood of significant adverse impact to the environment.

In the SEPA checklist, in reference to Staging Areas, "Ecology was not provided adequate information in this checklist to evaluate the environmental impacts of storage structures and lagoons. These actions are not being evaluated as part of this SEPA checklist." Then where exactly are they being evaluated? A "staging area" is still a "storage area." For goodness sake, you should understand that the risks imposed by the lagoons are actually more numerous than the risks imposed by spreading of the biosolids, completely aside from the fact that the lagoon containment system may fail. This proves that there is probably significant adverse impact to the environment that will occur. The lagoon is what broke and washed Ted Trulson's fish away. That you are not addressing management of the lagoons is appalling!

We had a 3.0 magnitude earthquake here in Onalaska just the other day. If this earthquake had occurred and broken the sludge pit once again, those biosolids would have once again flooded down the ridge.

Ted Trulson is not able to actively engage himself during this comment period. I will be submitting his comments for him in a separate attachment.

Response to I-36-9

Thank you for sharing your concerns. Ecology has to operate based off of what is available in the scientific literature. I was unable to find any peer-reviewed scientific studies correlating cancer or other illnesses with biosolids when they are land applied at agronomic rates, which is when the amount of nitrogen applied to the crop is equivalent to the amount of nitrogen that crop can absorb.

Ecology takes its role as an environmental regulatory agency very seriously and does its best to ensure that permit conditions are complied with. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, it takes the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes citizen complaints very seriously and they often lead to announced and unannounced site visits. If you believe that you have information related to a potential violation of the permit, please report it to Ecology immediately so that it can be investigated.

Ecology agrees that insufficient information was provided to evaluate long term storage, which is why no long term storage was approved for any of the units. This includes the already constructed lagoons and storage bunkers located at the Big Hanaford, Burnt Ridge, Homestead and Newaukum Prairie units. The maximum six weeks of staging refers to the act of accumulating and storing biosolids in a field until enough has been accumulated to land apply. If rain is projected to occur during the time biosolids are staged in a field, the piles must be covered with a tarp or other non-permeable barrier to prevent surface runoff or leaching.

If Fire Mountain Farms wants to add long-term storage to these units at a future date this would be considered a significant change to their permit. Storage facilities would need to be inspected to make sure their structural integrity is in-tact. Additionally, another SEPA evaluation would need to be conducted and everyone on their Lewis County Interested Parties List (IPL) would need to be notified so they have the opportunity to submit comments. Everyone who has submitted a comment during this comment period has been added to their IPL.

Comment I-36-10

9. The land where my livestock grazes will be contaminated by the multitude of animals that traverse the surrounding land. Not too long ago, I watched a small herd of elk run down through the Homestead Unit, jump into my field, run up to about 200 feet from my house, then run back down and jump into my other field, and finally jump out at the bottom. This behavior happens with the wildlife daily. If FMF had just spread class B biosolids, it would be all over my land. My livestock will be eating grass with biosolids on it, not even getting that 30 days off of it before grazing as stated in the rules. We will then eat the flesh of the cattle and drink the milk from the goats. I will then pick (clean) the feet of the horses, which I do almost every day, thereby getting class B biosolids all over my hands and body. My dogs run through my fields as well, then they will come to the house with pathogenic biosolids on their feet. That the spreading of class B biosolids is allowed literally surrounding another person's property is horrific. This is not somewhere in the midwest where the closest house is a mile away, along with the closest creek or river. These are very close residential properties with waterways throughout.

Response to I-36-10

Biosolids applied to soils must be treated to reduce or eliminate pathogens. Class B biosolids undergo processes to significantly reduce levels of pathogens and are often below those found in animal manures. The risk associated with wildlife transporting pathogens from biosolids is no greater than when they come into contact with land applied manure.

To protect the public there are restrictions on livestock grazing for 30 days following application. The 30-day site restriction is focused on limiting the livestock and human exposure to potential pathogens and other constituents in biosolids (e.g. metals, trace organic compounds) through direct ingestion of biosolids lying on the soil surface, splashed on the crop, or mixed with the soil. The site restrictions for livestock grazing are based on extremely conservative risk assessment data. These restrictions are not required for wildlife because they are not confined to specific fields for grazing and thus they have less potential of coming into contact with and transporting pathogens.

Comment I-36-11

Martha Thode told me last year that I shouldn't grow root vegetables where biosolids have been. Well, it seems that that is my entire property. So because of Ecology and FMF, I cannot safely have a garden on my own land.

Response to I-36-11

There are crop harvesting restrictions to protect human health following a Class B land application (40 CFR Part §503.32(b)(5)(iii)). Those restrictions do not last forever though. A very conservative harvest restriction was established to ensure that the hardest pathogens that could potentially be in land applied biosolids would have adequate time to die-off. The pathogen of main concern to the EPA was the eggs laid by parasitic helminth worms, which are rarely detected in Class B biosolids in the United States. Root crops are the most likely to come in contact with helminth eggs and have the longest harvest restrictions. Since the biosolids remained on the soil surface for at least than four months on your property, the harvest waiting period is 20 months from the last time of application.

Comment I-36-12

10. It is impossible to say that runoff will not occur. Both Homestead and Burnt Ridge Units have slopes upwards of 18% grade. This is a fact. Gravity does exist, and water does run down hill.

And those grades are either above my well and property, or above a naturally occurring pond which the wildlife including the eagles and the owls use. The SEPA checklist states, "runoff should not present a problem." This is "misrepresentation." You know how much rainfall we can get from March-June.

Response to I-36-12

Thank you for your comment. Please see the response provided to a similar comment you made in comment I-36-2.

Comment I-36-13

11. The SEPA checklist states that, "This project will not affect surrounding farms, this is a standard ag practice." This is a false statement. The biosolids particles and materials will waft to and be tracked onto my farm, and myself and my livestock will be exposed to it. This is "misrepresentation."

That you say that it is standard ag practice to spread class B biosolids is false. I now know a lot of farmers and their families, and it is certainly not standard ag practice here in Lewis County. We are not on 10,000 acre farms, far away from our neighbors. If FMF spreads class B biosolids on their land in Idaho, Oregon and Montana, or east of the mountains here in Washington, it is not my concern. My concern is here, where the proposed sites are in such close proximity to the communities that will without a doubt be adversely affected.

Response to I-36-13

Your comment has been noted.

Comment I-36-14

12. You state that it is a legal and regulated activity to spread class B biosolids, thereby justifying its use. The use of DDT was legal and regulated as well. As we now know, we were wrong. We are wrong about the safety of class B biosolids as well, as we are ignorant. Much more research needs to be done. Until there is no doubt about the safety of class B biosolids, it should not be permitted to be spread onto fields that surround a citizens property. And as the EPA has stated, "The EPA identified 352 pollutants in biosolids but cannot yet consider these pollutants for further regulation due to either a lack of data or risk assessment tools. Without such data, the agency cannot determine whether biosolids pollutants with incomplete risk assessments are safe." This assessment from 2018 does not take into consideration the currently problematic deadly coronavirus strain.

Response to I-36-14

Your comment has been noted. Please refer to the response provided to your comment I-36-7.

Comment I-36-15

Covid-19 is a completely new pathogen and we cannot make any assumptions about its survivability in the sewage treatment process, in the native environment or in regards to transmission between native species and humans. One study was mentioned at the public hearing. Only one. This is not enough. We must conduct the scientific studies and not make assumptions based on studies from other pathogens. SEPA imposes a "look before you leap" requirement in addition to existing law. Simply citing applicable laws and references does not constitute disclosure of environmental impacts, including contaminants of emerging concern and microplastics and nanoplastics. This then dictates that the spreading of class B biosolids in the

near future should be halted, certainly anywhere near the public at large. Lewis County need not be an experimental dumping ground.

Response to I-36-15

Wastewater treatment plants treat viruses and other pathogens. COVID-19, a strain of coronavirus, is a type of virus that is particularly susceptible to disinfection. For wastewater, some recent studies have found RNA fragments but not infectious virus in wastewater. This means scientists can detect whether a local population has infected people, but the RNA fragments in the wastewater do not have the ability to infect new people. The morphology and chemical structure of this virus are similar to those of other coronaviruses for which there are data both on their survival in the environment and on effective measures to inactivate them (WHO 2020, Gundy et al 2008). The main routes of transmission of COVID-19 are respiratory droplets and direct contact.

World Health Organization. 2020. Water, sanitation, hygiene, and waste management for SARS-CoV-2, the virus that causes COVID-19. Reference number: WHO/2019-nCoV/IPC_WASH/2020.4

Gundy PM, CP Gerba and IL Pepper. 2008. Survival of Coronaviruses in Water and Wastewater. Food and Environmental Virology. 1:10-14.

Comment I-36-16

13. Between 2014-2015, when Thode finally got caught, all residential and non-timberland parcels immediately below the Burnt Ridge Unit decreased in value by up to \$66,000. When I go to sell my property, I must disclose that hazardous waste was spread on my land, and that pathogenic waste is spread all around my land. This was not disclosed to me when I purchased this property in 2017. My property value is directly affected by FMF's activities, and property value effects should be taken into consideration when evaluating appropriate sites for the application of class B biosolids.

Response to I-36-16

The state law for real estate in Washington (RCW 64.06.022)³³ states that when selling your home you need to disclose the following information if you are in proximity to a farm or working forest: "This notice is to inform you that the real property you are considering for purchase may lie in close proximity to a farm or working forest. The operation of a farm or working forest involves usual and customary agricultural practices or forest practices, which are protected under RCW 7.48.305,³⁴ the Washington right to farm act." Ecology does not have the legal authority to require information about Class B biosolids land application to be provided at the time of sale.

In December 2016, Landau Associations, a third party consultant, completed a Soil Characterization report that determined there was no soil contamination from benzene or toluene present from the land application of delisted waste. Composite soil sample results were compared to the Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use (MTCA cleanup levels). Soil results were non-detect for benzene with laboratory reporting limits less than or equal to 3.32 micrograms per kilogram (µg/kg) for all composite

³³ <https://apps.leg.wa.gov/rcw/default.aspx?cite=64.06.022>

³⁴ <https://apps.leg.wa.gov/rcw/default.aspx?cite=7.48.305>

samples. The MTCA cleanup level for benzene is 30 µg/kg. Toluene was detected in all samples above the laboratory reporting limit but below the MTCA cleanup level of 700 µg/kg. The greatest concentration of toluene detected in a composite sample was 21.7 µg/kg. Since the soil was below the MTCA cleanup levels for both benzene and toluene, Ecology did not require that the application of this material needed to be attached to the deeds of any of the properties where this material was land applied.

Comment I-36-17

Laurie G. Davies says, "I believe our state biosolids program functions to protect public health. When managed in accordance with the rule and the General Permit, applications of biosolids to soils are protective of human health and the environment."

Given the above mentioned statements from the EPA, reference 19-P-0002, how in the world can this statement be given any logical consideration? It doesn't even make sense. A sentence starting with, "I believe" should be used for discussions about religion or aliens, not science and health.

Clearly, there is absolutely a risk of probable significant adverse impact on the environment, according to the EPA. This cannot be argued.

If you deny that there will be probable significant adverse impact to the environment, if you deny that because of your actions or inactions, I will likely be handling class B biosolids with my bare hands, you are purposefully allowing FMF and the Thode's to poison myself, my family including my immunocompromised mother, and my livestock. This is an undeniable fact. If you do not revoke the DNS, and you allow FMF to spread class B biosolids on the Burnt Ridge Ranch and Homestead units, in addition to FMF, I will hold Ecology responsible for any adverse effects or events stemming from the proposed activities.

Thank you for your time and expertise in this important matter.

Christy S. Tayloe, LVT
1058 Burnt Ridge Road
Onalaska, WA 98570

Response to I-36-17

Report Number 19-P-00021 was prepared by the Office of the Inspector General (OIG) and represents that agency's assessment of Environmental Protection Agency's performance. The OIG report focused only on the presence of chemicals found in biosolids and did not consider their concentrations. This report does not make it clear to the reader that the occurrence of pollutants in biosolids does not necessarily mean that those pollutants pose a risk. As a result, a literature review was conducted by prominent scientists in conjunction with the USDA National Institute of Food and Agriculture which demonstrated that there is sufficient data and research available to show that biosolids regulations are protective of both human health and the environment (Basta et al 2020).

Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar

products.

We encourage you to read EPA's responses which are appended to the OIG report. We believe EPA has good reason to question several of the findings and recommendations of the OIG.

Basta N, I Pepper, LS Lee, G Kester, and A Zearlet. 2020. W4170 Multistate research committee response to USEPA OIG report NO. 19-P-0002. USDA National Institute of Food and Agriculture Research Committee W4170.

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

I-37: Christy Tayloe

Comment I-37-1

This note is in reference to FMF's determination of nonsignificance and permitting process for application of class B biosolids to five Lewis County sites. If, despite the contrary evidence, the permit is granted, in addition to the Additional and More Stringent Requirements that FMF must comply with upon approval of the agreed order, much more stringent requirements should be required, and are summarized below. Talking points have been numbered below for ease in comment response.

1. To vaguely require that, "slopes greater than 15% are required to have reduced application rates to prevent surface water contamination" is inappropriate. NO biosolids application should occur on land with slopes greater than 8%. Certainly not on slopes that lead to land owned by parties other than FMF.

Response to I-37-1

Ecology is confident that reducing application rates for fields with slopes greater than 15% will prevent surface water contamination. Application rates must already be sent to Ecology for regulatory oversight, at which point the rate request is evaluated for whether or not it is appropriate for the field and crop. If a rate is too high for a field with greater than 15% slopes, then the rate must be reduced before approval is granted and before land application of biosolids can begin. No change in the permit resulted from this comment.

Since the topography (slope) of fields BR-13 and BR-14 is contoured directly to your house, these fields are limited to the application of dewatered biosolids only. Liquid application of biosolids on these fields is prohibited.

Comment I-37-2

2. No information was provided in the SEPA checklist regarding the storage lagoons. This is unacceptable. The lagoons are the most dangerous places in this operation, and material being stored for six weeks is as important as it being stored for 6 months. It's still being stored, and potentially leaching, and having risk of containment failure. The storage facilities must be regulated and requirements set forth prior to any DNS or permit approval.

Response to I-37-2

Ecology agrees that insufficient information was provided to evaluate long term storage, which is why no long term storage was approved for any of the units. This includes both lagoons and storage bunkers. The maximum six weeks of staging refers to the act of accumulating and storing biosolids in a field until enough has been accumulated to land apply. If rain is projected to occur during the time biosolids are staged in a field, the piles must be covered with a tarp or other non-permeable barrier to prevent surface runoff or leaching.

If Fire Mountain Farms wants to add long-term storage to these units at a future date this would be considered a significant change to their permit. Storage facilities would need to be inspected to make sure their structural integrity is in-tact. Additionally, another SEPA evaluation would need to be conducted and everyone on the their Lewis County Interested Parties List (IPL) would need to be notified so they have the opportunity to submit comments. Everyone who has submitted a comment during this comment period has been added to their IPL.

Comment I-37-3

3. It is stated that biosolids, "should not be tracked off site." This is noncommittal. Wording needs to be changed to, "biosolids Will not be tracked off site," and that breaking said rule will result in violation.

Response to I-37-3

Thank you for bringing this to our attention. "Shall" has been converted to "Must" where appropriate throughout the additional and more stringent conditions. If you observe biosolids being tracked onto the road please report it to the southwest biosolids coordinator.

Comment I-37-4

4. The water table sampling, soil sampling and all other requirements set forth should not be performed by FMF. FMF needs to be held financially responsible for a third party, not hired by or in any way personally or professionally affiliated with FMF or it's staff, to perform required testing.

5. Surrounding properties not owned by FMF or it's family should be provided, at FMF's expense, initial and annual soil and water testing by a third party, to include testing for pFAS, heavy metals, microplastics, and drugs.

Response to I-37-4

Ecology staff has accompanied Fire Mountain Farms staff numerous time, both with and without the Vice-President on-site, and feel confident in their ability to monitor groundwater depth and follow their approved soil sampling plan. Ecology will continue to conduct announced and unannounced inspections for both activities.

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy and Rosales 2015). Additionally, buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC),³⁵ Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require monitoring of offsite wells.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Comment I-37-5

6. When violations occur, FMF should be fined accordingly, and the permit should be revoked.

Response to I-37-5

There are specific rules that direct how enforcement is conducted for facilities with coverage under the permit for biosolids management . These rules are outlined in the biosolids management rule at WAC 173-308-310. Any violation of conditions outlined in the general permit for biosolids management or more stringent requirements described in a final coverage letter or agreed order will be reviewed for appropriate enforcement. Monetary enforcement is directed through language in RCW 70A.226 - Municipal Sewage Sludge-Biosolids.

Formal enforcement is one of many compliance tools available and may not be necessary to achieve compliance in every case. Technical assistance, partnerships with affected groups, and education are also key tools in achieving compliance. Formal enforcement is used when appropriate. Ecology uses the Biosolids Enforcement Guidelines for the Solid Waste Management Program as a guidance document to determining appropriate responses to incidents of non-compliance. It does not prescribe precisely what action or actions should be taken in each case, as each incident of non-compliance can be different. Therefore this document is intended to provide a useful tool to Ecology personnel which maintains maximum flexibility to deal with each individual incident. All regulated facilities and entities are expected to comply with biosolids management laws and regulations. Ecology strives to ensure that all facilities and entities know the legal requirements and how to comply with the law. If an enforcement action is necessary, Ecology will ensure that the action is clearly defined and consistent with the magnitude of the violation. Compliance with biosolids laws and regulations is critical for the protection of human health and the environment.

³⁵ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Comment I-37-6

7. In no document do I see the referred to, "approved Spill Prevention and Response Plan." This is unacceptable and should have been provided to the public prior to closing of the comment period.

Response to I-37-6

Fire Mountain Farms already has an approved Spill Prevention and Response Plan (SPRP) that was submitted with their 2015 application for the General Permit for Biosolids Management. This document is used when biosolids are being transported over the public roadway so that appropriate action can be taken in case of a spill. The route information must be updated in the SPRP for approval before each new source of biosolids is transported, since that is dependent on the location the biosolids are coming from. Additionally, the SPRP includes the spill prevention measures that transporters will engage in to prevent a spill from occurring, as well as the steps to be taken to respond to a spill. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard. Fire Mountain Farms will need to submit an updated SPRP when they submit their application for the upcoming General Permit for Biosolids Management.

Comment I-37-7

8. An Environmental Impact Statement must be required prior to permitting the spread of class B biosolids on the proposed five sites. FMF's SEPA checklist and supporting documents DO NOT negate the need for an EIS. The EIS should be performed and prepared by a third party not in any way affiliated with FMF.

9. A hydrological assessment, at the expense of FMF and performed by a third party not in any way affiliated with FMF, must be performed prior to permitting the spread of class B biosolids on the proposed five sites, to accurately evaluate the presence and movement of water in all areas.

Response to I-37-7

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)³⁶ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel.

After careful consideration of the proposal, Ecology has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW43.21C.030 (2)(c).³⁷

³⁶ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

³⁷ <https://apps.leg.wa.gov/rcw/dispo.aspx?cite=43.21.030>

Comment I-37-8

10. In addition to the 200 foot boundary from a residential dwelling in regards to where the biosolids are to be applied, the trucks, and equipment to transport the biosolids, both on and off the road, should also be no closer than 200 feet. (When the sewage trucks enter the lower Burnt Ridge Unit fields, they are 5 feet from my body. When they enter the Homestead Unit, they are 20 feet from my body.)

11. Surrounding residences should be notified in advance any time biosolids are to be transported near or applied near a citizen's property or dwelling. The particles inhaled in the vicinity of the biosolids are pathogenic, and the community should have the ability to leave the area or remain indoors if necessary to avoid exposure.

Response to I-37-8

According to Google Earth the residence at this address is 450 feet from Burnt Ridge Road, making all fields on Homestead unit outside of the 200 foot buffer required for this residence. This residence is also noted as being 500 feet from the entrance to the lower Burnt Ridge Unit fields which is also outside of the 200 foot buffer required.

It is not within Ecology's jurisdiction to notify citizens every time biosolids are transported or applied near their property. As long as the public notice requirements in WAC 173-308-310³⁸ have been fulfilled, further notification is not required.

Comment I-37-9

12. A monitoring system for groundwater contamination needs to be designed and monitored by an unaffiliated third party please! There is absolutely potential for groundwater contamination at these sites. See WAC 173-200-060 and WAC 173-308-190: "When the potential for groundwater contamination due to biosolids application exists, the department may require groundwater monitoring or other conditions in accordance with the provisions of chapter 173-200 WAC. If it is determined that an enforcement criterion may be violated, an evaluation must be conducted to demonstrate compliance with the provisions of chapter 173-200 WAC."

Response to I-37-9

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent discharge from a wastewater treatment facility (McCarthy 2015).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are to be applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels will help guard against groundwater pollution.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and an

³⁸ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-310>

application window that eliminates the rainiest portions of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water.

Research over the past 30 years, including the use of lysimeters, shallow wells, and deep wells, have found that biosolids pose little risk to groundwater quality (Brobst EPA). As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC),³⁹ Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require third party groundwater monitoring for these sites.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Brobst B. The Environmental Protection Agency. Biosolids Reference Sheet. EPA Region VIII.

Comment I-37-10

13. Trucks carrying sewage waste should not be permitted to traverse narrow and steep roads due to the risk of possible accidents and subsequent material spillage.

Response to I-37-10

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

Ecology requires a Spill Prevention and Response Plan when biosolids are being transported over the public roadway so that appropriate action can be taken in case of a spill. Action includes engaging in spill prevention measures to prevent a spill from occurring. If a spill does occur, Ecology must be immediately notified after driver safety has been established and other drivers have been alerted of the potential hazard.

Comment I-37-11

As it is my duty as a community member to help Ecology in this process, and in light of the large amount of information we community members have provided to you, please now agree that Ecology will be negligent if the DNS is not removed, and that if a permit is granted to FMF to spread class B biosolids on the five proposed Lewis County sites, Ecology will be purposefully putting the environment and its resident people in jeopardy.

Response to I-37-11

Please see the response provided to your comment in I-37-1. Thank you for taking the time to review this proposal in such detail. We greatly appreciate public participation in this process.

³⁹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

While the DNS will not be withdrawn, as explained in the response to comment I-37-1, several of your comments have resulted in additional conditions being required for these sites.

I-38: Jennifer Chandler

Comment I-38-1

We purchased property near Burnt Ridge Rd, below the proposed biosolid site to build a house on down the road. Now reading this how are we supposed to get a clean well? This will devalue our property and make it useless to us.

Response to I-38-1

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:

<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-38-2

Everything I have read states other countries quit doing this years ago due to damaged land and water tables. Previously treatment facilities burned the sludge or dumped it into the ocean, the federal government barred that practice because it violated the clean air rules. The EPA now insists spreading the same toxic substance on farmland is safe, I don't think so.

Response to I-38-2

The European Union land applies 50% of its biosolids on agricultural soils (Gianico et al. 2019) and Canada land applies 40% of its biosolids on agricultural soils (McCarthy and 2015 Loyo-Rosales). Many other countries engage in this same practice to 1) reuse the beneficial nutrients that are essential for healthy soils and plant growth and 2) reduce eutrophication, which is when an excess of nutrients in a body of water causes a dense growth of plant life which leads to the death of animal life from lack of oxygen. The Federal requirements for the Standards for the Use or Disposal of Sewage Sludge (40 CFR Part 503) are consistent with standards used in other countries.

The biosolids program in the State of Washington is based on the State's Biosolids Management Rule, Chapter 173-308 WAC.⁴⁰ This chapter establishes requirements, standards, management and monitoring practices, and recordkeeping and reporting requirements that are applicable when biosolids are applied to the land to protect human and environmental health.

⁴⁰ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

This includes concentration limits for pollutants in biosolids, pathogen reduction standards and vector attraction reduction standards. The Federal and State rules further govern the use of biosolids through site specific restrictions and crop harvesting for land applied biosolids.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC),⁴⁰ Ecology has determined that the risk of environmental contamination at these sites is very low.

Gianico A, CM Braguglia, A Gallipoli, D Montecchio and G Mininn. 2019. Land Application of Biosolids in Europe: Possibilities, Constraints and Future Perspectives. Water 13:1-16.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

I-39: Betsie De Wreede

Comment I-39-1

The Chehalis River will be impacted by run off from the biosolids. Water quality is already poor. The farm should be required to plant riparian hedgerows to mitigate contamination which would mean they need at least 3 years before application.

Response to I-39-1

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]),

which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-39-2

I am also concerned that if access to land where it is applied is considered dangerous for livestock and humans, there will also be damage to wildlife.

Response to I-39-2

Grazing restrictions are limited to domestic animals while the pathogens are further reduced by environmental factors like temperature, pH, moisture and UV radiation. The 30-day period is a conservative site restriction designed to protect livestock and the most highly exposed individuals. These restrictions are not required for wildlife because they are not confined to specific fields for grazing and thus they have less potential of coming into contact with and transporting pathogens.

Further, studies have shown that biosolids can be a useful tool for restoration by improving prey availability for birds of prey in degraded habitats (Buers et al. 2019, Meineke 2020). Additionally, no adverse impacts have been shown on wildlife exposed to biosolids-treated soils, or to humans from trace elements found at the current concentrations in biosolids (Fuchsman et al 2010; Chaney et al 1996).

Buers, M., F.I. Doyle, K.J. Lawson, and K.E. Hodges. 2019. Effects of biosolids amendments on American Kestrel nest site selection and diet. Canadian Journal of Zoology 97: 1186–1194.

Chaney R.L., Ryan J.A. and G.A. O'Conner. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. The Science of the Total Environment 185:187-216.

Fuchsman P., Lyndall J., Bock M., Lauren D., Barber T., Leigh K., Perruchon E., and M. Capdevielle. 2010. Terrestrial ecological risk evaluation for triclosan in land-applied biosolids. Integrated Environmental Assessment and Management 6:408-418.

Meineke, J. 2020. Effects of biosolids on a grassland community of rodents and birds of prey in British Columbia. MSc, University of British Columbia Okanagan, Kelowna BC.

Comment I-39-3

They broke the law by applying other materials along with biosolids before and should not be allowed to do it now.

Response to I-39-3

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

I-40: JOHN TURNER**Comment I-40-1**

Further comments:

We lived on the south border of the Fire Mountain Farms Burnt Ridge site for four years, 2004-2008. In October of 2005, a flood of black ooze ran down the hill from the FMF property onto our property, covering about a tenth of an acre 2-3 inches deep. The area involved was across our well head and garden area.

The slope of the Burnt Ridge application site is too great, and the proximity to residential property and domestic water supplies too close to prevent danger to the down hill residences to the south. One human error, or one mechanical failure, can and has at least twice, caused damage to neighboring properties, and risk to the inhabitants. Therefore, the Burnt Ridge site should not be permitted.

Further, the FMF operators did not operate in a good faith, neighborly fashion. When the spill happened, they did not inform Ecology. They came onto our property and attempted to flood the solids away, pumping untold more gallons of water into the waste and making the biosolids run further onto our property and towards a water body, a pond down hill of the original spill. Therefore, Fire Mountain Farms should not be re-permitted.

Further, the operators of FMF did not offer any compensation, or even an apology for despoiling our property. They merely insisted that they are permitted to spread the treated sewage onto their land and it was within their rights to do so. They were not good or responsible neighbors.

Response to I-40-1

Thank you for bringing forward this information. Because of their past violation and comments like yours, several additional and more stringent requirements have been added to the agreed order requirements. This includes a 200 foot application buffer from the property mentioned in this comment, as well as the prohibition of liquid application of biosolids on fields the adjacent fields, BR-13 and BR-14.

Comment I-40-2

Further, the stench of the human and municipal waste is not compatible with a residential area. Clouds of insects that are attracted and breed on the fields swarmed into the house, even with all windows and doors closed or screened. We had to keep our doors and windows closed during the summer heat to attempt to keep the odor and insects out. A neighbor should not subject a neighbor to such conditions.

The Burnt Ridge Fire Mountain Farms site is not safe and not compatible with the surrounding residential usage.

Therefore, for all the reasons above, the site should not be permitted to accept and spread treated municipal waste, AKA biosolids.

Response to I-40-2

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

I-41: Ted Trulson**Comment I-41-1**

A number of years ago, I cannot remember the exact date, the sewage waste storage lagoon on the Burnt Ridge Unit site of Fire Mountain Farms broke open. All of the waste, which contained the hazardous waste as well, washed down the ridge, right into the pond behind my home. At the time, it was full of valuable fish. The fish were literally washed away, out of the pond and down the creek to the salmon creeks. I complained to Martha Thode about the event. She did nothing. Absolutely nothing. I did not complain to the county. That would have likely been a

waste of my time, as the county did nothing about the tons of sludge that flooded the neighbors place at 1058 Burnt Ridge Road.

I have also for many years seen trucks full of sewage waste travelling down to 723 Johnson Road and coming back up empty. My friend Walter Chandler used to tell me the stories of the ankle deep sewage waste in the surrounding area while he was out hunting.

I vehemently oppose the permitting of FMF to continue to adversely impact the environment. My home and drinking water well is due south of the Burnt Ridge Unit and storage lagoon. My land will therefore be at risk once again if the county allows them to resume this practice.

Response to I-41-1

If biosolids are spilled onto your property, contact the biosolids coordinator immediately with a description and location of where the spill occurred so it can be investigated.

Class B biosolids can only be applied on permitted properties. 723 Johnson Road is a site permitted by Fire Mountain Farms under the unit name Mill Creek.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and limiting the application window to the drier parts of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water.

Buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC),⁴¹ Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require monitoring of offsite wells.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Comment I-41-2

Also, the fact that both Bob and Martha Thode have gastrointestinal tract cancer and are undergoing chemotherapy at the exact same time is no coincidence. Clearly, the stuff is dangerous, and should be applied to lands that are far from any other residential dwellings or creeks and rivers. If they choose to expose themselves so be it. They should not be allowed to expose the rest of us as well.

⁴¹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Response to I-41-2

I cannot speak to the personal health of Bob and Martha Thode and their current medical issues. What I can tell you is that years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products. All of these household products end up in our wastewater system after being flushed or drained from our personal residences.

If a chemical ends up in biosolids we know that it has properties that bind it to the solids (otherwise it would have remained with the liquids, i.e. wastewater effluent). This means that chemicals present in biosolids are not readily water-soluble and therefore, unlikely to leach after land application. Biosolids are land applied at agronomic rates based on the nutrient needs of the crop being grown. When applied to the soil, physical and chemical processes occurring within the soil break down a lot of chemicals. The U.S. Environmental Protection Agency (USEPA), other federal agencies, and universities have and continue to conduct research on the potential risks of trace chemicals in biosolids. Given the information currently available, Ecology continues to think Federal (40 CFR Part 503) and Washington (Chapter 173-308 WAC)⁴² regulations for biosolids management protect human and environmental health.

Kennedy/Jenks Consulting. 2015. Biosolids Risk Analysis. Northwest Biosolids Management Association.

Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

I-42: Christy Tayloe

Comment I-42-1

I neglected to mention in a previous comment something that Martha Thode said to me last year. She was enlightening me about biosolids, and said that they had lost their permit because the people in charge of regulating had either left or retired and the new people weren't yet friends with them. She essentially informed me that Lewis County Good 'ol Boys Network had had some shift changes and that is why they lost their permit.

I thought you should know this.

Thank you,

Christy

⁴² <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Response to I-42-1

Thank you for sharing. Comment is noted.

I-43: Bren Jurica

Comment I-43-1

I believe the permit for applying class B biosolids, applied for by Fire Mountain farms(FMF), should be denied. The Determination of Non significance needs to be revoked. More testing needs to be done and published before these sights can be considered safe to apply any biosolids. Please see below for talking points.

1. Under WAC 173-308, codes exist that are not being strictly followed by FMF:

-WAC 173-308-210(5)(v) states that livestock is not to be on the land for a minimum of 30 days after application of biosolids. My friend/coworker Christy Tayloe is one of the FMF neighbors and has seen them put cattle on the fields soon after spreading the biosolids. I personally have spoken with Martha while at Christy's house one day, at which she stated she has around 90-100 head at any given time and cannot keep them on any one field for more than 4 days. If she is moving them that often, how is she keeping them off the pasture for at least 30 days? Also, who is going to keep track of this and enforce it?

The stated months of application are from March 1 to October 31. The SEPA checklist states that intense grazing occurs from March to November with 50-120 head of cattle. These months coincide with each activity..

These cows that she is raising on her pasture that is tainted with who knows what from these biosolids are being sold to feedlots to go into the main food chain. How this is ok is beyond me and should be investigated!

-WAC 173-308-210(5)(vii)&(viii) state that public access to land with a potential for public exposure must be restricted for a minimum of thirty days, up to one year, after the last application of biosolids.

This also happens to be the land owner that opens up her pastures for parking of many trucks and horse trailers for the bi-annual Burnt Ridge horse trail ride. I personally have parked on her property not knowing that there were previously applied biosolids, though I did notice that the ground we were parked on was very sludgy and mucky.

The land owner consent agreement clearly states that public access be restricted for one year, or land owner will make certain that all parties are informed of the biosolids that have been applied. I have been going on that particular trail ride, and parked in their pasture, for the last 4-5 years and have never been made aware of the hazardous conditions. I will no longer be going on that ride.

Response to I-43-1

Federal regulations require a 30 day grazing restriction between when Class B biosolids are applied and when cattle can graze on agricultural lands. The 30-day period is a conservative site restriction designed to protect livestock and humans that are most likely to come into contact with biosolids. The requirement is listed in 40 CFR Part 503(b)(5) – Site Restrictions, (v) Animals shall not be grazed on the land for 30 days after application of sewage sludge. This requirement was established by the publication of 40 CFR Part 503 to the Federal Register on February 19, 1993.

These sites have not been permitted to accept Class B biosolids since March 2016 and thus have not been subject to this grazing restriction in the past 4 years. Class A biosolids have been

applied during those 4 years though and they do not have the same site management restrictions. Moving forward, the 30 day grazing restriction is now required for these sites when Class B biosolids are applied. If you believe livestock have been allowed on a field before the 30 day grazing restriction expires, please contact the biosolids coordinator with a description and location of where this was observed.

The Burnt Ridge unit is being permitted as a low-contact site because their Site Specific Land Application Plan for this unit only refers to agricultural activities. It was previously appropriate for Fire Mountain Farms to allow trucks and horse trailers on their fields for Burnt Ridge horse trail rides because they were not subject to Class B site management restrictions. Moving forward, that is no longer an option if they wish to remain in compliance with their biosolids permit.

Comment I-43-2

2. Christy, who is their neighbor was not informed when buying her house that her property used to be one of their dump sites.

Under WAC(5)(i-iii), she cannot have any sort of garden on her own property to the the hazards these biosolids present. The land in the Burnt Ridge area is quite hilly. There is no way these biosolids are staying out of the waterways/wells.

Response to I-43-2

There are crop harvesting restrictions to protect human health following a Class B land application (40 CFR Part §503.32(b)(5)(iii)). Those restrictions do not last forever though. A very conservative harvest restriction was established to ensure that the hardiest pathogens that could potentially be in land applied biosolids would have adequate time to die-off. The pathogen of main concern to the EPA was the eggs laid by parasitic helminth worms, which are rarely detected in Class B biosolids in the United States. Root crops are the most likely to come in contact with helminth eggs and have the longest harvest restrictions. Since the biosolids remained on the soil surface for at least than four months on Christy's property, the harvest waiting period is 20 months from the last time of application.

Comment I-43-3

3. I have looked at all the proposed maps. All of these sites have homes with wells and/or waterways nearby. In western washington, where it rains so much,there is no possible way these hazardous wastes are not going into somebody's water source.

Response to I-43-3

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:
<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site

Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-43-4

4. In 2016, FMF had their permit denied due to hazardous waste being mixed in from Emerald Kalama Chemical. They are still working with Kalama Chemical. How can we be sure they are not spreading hazardous waste again? If we've already seen the shady actions taken by FMF and no real consequence has been given, how do you expect us to trust that we can be safe from the hazards posed by these biosolids? And this definitely will have a probable significant adverse impact on environment, and the people that live in the environment!

Response to I-43-4

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes community member complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

Comment I-43-5

5. In the SEPA document, there are statements regarding the rate of spread and manure on the soil. The spreading of manure may prohibit the use of biosolids completely. With 100 head of cattle on their fields, it seems to me that they would be prohibited to spread the biosolids.

Response to I-43-5

All biosolids applications must be applied at an agronomic rate, which is determined by the crop's need for nitrogen. This protects groundwater from the risk of nitrate contamination. Agronomic rates must be sent to the biosolids coordinator for evaluation before land application of biosolids can begin. Fire Mountain Farms is now required to report all nutrient sources applied to permitted fields. If other nutrient sources, such as grazing cattle or manure, are applied to fields they are factored into the biosolids agronomic rate which will reduce the amount of biosolids that can be applied to that field.

Comment I-43-6

It is appalling that big money can pay their way through situations like this! There are so many toxins/medications/cancer drugs/hard drugs/etc. in human waste. It should not EVER be applied anywhere near any homes or food sources!

Does anyone ever think about the declining fish counts? The increasing cancer cases? So many things are probably linked to hazardous waste going into the ground water. I believe FMF is definitely a source of contamination and they need to be stopped.

If this permit is granted and they are allowed to start this up again, I would at least like to see their lands, soil, lagoons, etc. tested by a completely outside source that has no ties to the farm whatsoever and is not motivated by money.

Response to I-43-6

Years of research studies have shown that biosolids contain many different chemicals, but at very low concentrations (Kennedy/Jenks 2015, Prosser and Sibley 2015, Chaney et al 1996). Most of the trace chemicals found in biosolids result from the use of personal and household products which contain these chemicals. This is because we buy, use, and consume thousands of chemicals in our everyday lives. These products include shampoos, laundry detergents, plastics, hand sanitizers, toothpastes, clothing, soaps, furniture, medications, and similar products. All of these household products end up in our wastewater system after being flushed or drained from our personal residences.

If a chemical ends up in biosolids we know that it has properties that bind it to the solids (otherwise it would have remained with the liquids, i.e. wastewater effluent). This means that chemicals present in biosolids are not readily water-soluble and therefore, unlikely to leach after land application. Biosolids are land applied at agronomic rates based on the nutrient needs of the crop being grown. When applied to the soil, physical and chemical processes occurring within the soil break down a lot of chemicals. The U.S. Environmental Protection Agency (USEPA), other federal agencies, and universities have and continue to conduct research on the potential risks of trace chemicals in biosolids. Given the information currently available, Ecology continues to think Federal (40 CFR Part 503) and Washington (Chapter 173-308 WAC)⁴³ regulations for biosolids management protect human and environmental health.

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Prosser RS and PK Sibley. 2015. Human health risk assessment of pharmaceuticals and personal care products in plant tissue due to biosolids and manure amendments, and wastewater irrigation. Environment International 75:223-233.

Chaney RL, JA Ryan, and GA O'Connor. 1996. Organic contaminants in municipal biosolids: risk assessment, quantitative pathways analysis, and current research priorities. Science of the Total Environment 185:187-216.

I-44: Brianna Spencer

Comment I-44-1

This DNS is based solely on FMF's provided information including the SEPA checklist. The information in that checklist has not been verified by you or any other third party not affiliated

⁴³ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

with FMF. Any information provided by FMF will clearly be biased in their favor and should not be used to determine the health and well-being of our community and environment.

That Ecology, "has determined that this proposal will not have a probable significant adverse impact on the environment" is ridiculous. That an environmental impact statement (EIS) is not required under RCW43.21C.030(2)(c) is also totally ridiculous. That determination is based solely on information provided by FMF, which is lacking in proof of statements therein, and completely false in others. As stated in WAC 197-11-340, (3)(a)(ii), "The lead agency shall withdraw a DNS if: There is significant new information indicating, or on, a proposal's probable significant adverse environmental impacts." Also, "The DNS was procured by misrepresentation or lack of material disclosure; if such DNS resulted from the action of an applicant, any subsequent environmental checklist on the proposal shall be prepared directly by the lead agency or it's consultant at the expense of the applicant."

The above mentioned checklist is deficient and false.

Response to I-44-1

Ecology's determination of non-significance for this proposal is based on the fact that the land application of biosolids in accordance with state and federal rules is not likely to cause significant adverse environmental impacts. Under SEPA, significant means "a reasonable likelihood of more than a moderate adverse impact on environmental quality." Ecology's biosolids program is based on the federal rules (CFR 40 Part 503), the state regulations (Chapter 173-308 WAC)⁴⁴ and the State Biosolids General Permit.

In evaluating this proposal, Ecology reviewed the environmental checklist and other information, such as: the Site Specific Land Application Plan, information found on Lewis County's GIS Web Map, site specific soil data, and multiple site visits by Ecology personnel. Additionally, Ecology added clarifications to the SEPA checklist provided by Fire Mountain Farms where information was unclear or insufficient.

After careful consideration of the proposal, Ecology determined that the likelihood and significance of an impact occurring from this activity is low.

I-45:

Comment I-45-1

This is totally disgusting. I can not believe this is actually happening and okay with our commissioners.

Response to I-45-1

Comment noted. Thank you for participating in the public comment period.

⁴⁴ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

I-46: HARRY BHAGWANDIN

Comment I-46-1

I do not support Department of Ecology's (DOE) proposed action to permit Fire Mountain to start new biosolids field applications.

I have been a Lewis County resident since 1985, having raised four children with my wife on our tree farm and orchards off of View Ridge Road. I live in the Mill Creek drainage, a tributary of the Cowlitz River. My 65 acres of timberland is located on the other side of Burnt Ridge, downstream of potential runoff from biosolids field applications on the sites currently proposed for permitting by Fire Mountain.

I have listened to the first-hand accounts from multiple families' experiences of irreversible well contaminations. I have witnessed land contamination from run-off immediately following Fire Mountain's biosolids applications resulting in localized tree die-offs. Based on their past history of permit violations I do not trust that Fire Mountain will comply with new permit conditions, and as such would urge DOE to NOT renew and/or grant a new permit for biosolids applications on the proposed sites (or anywhere in Lewis County).

It is important that the health and safety of our watersheds be protected for human consumption as well as for fish and wildlife protection. I expect DOE and applicants who are granted DOE permits for biosolids applications to be held fully responsible for this protection. I have not been satisfied with DOE's actions in the past to hold Fire Mountain accountable for permit compliance. The burden of proof for water and land contamination should fall on the DOE and the permit holder, not on landowners.

I am not satisfied that DOE has the ability, expertise, or resources to hold permit holders accountable for compliance with permit conditions for biosolids applications. As experience shows, an ounce of protection is worth a pound of cure, and the potential known and unknown risks to watershed ecology and drinking water are not worth the benefits that may be provided by field applications of biosolids generated from municipal wastewater treatment facilities. Again, I strongly urge DOE to abandon the option of permitting Fire Mountain to apply biosolids on the currently proposed sites.

Thank you for providing me this opportunity to comment.

Response to I-46-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms,

Ecology will provide additional oversight. Ecology takes community member complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

I-47: Richard Garrow

Comment I-47-1

Permitting Fire Mountain Farms application it will increase Jorgensen rd traffic significantly with up to 11 (22 round trips) Simi Truck trips daily for weeks, will negatively impact an already overburdened rural road. Jorgensen road already has significant logging truck activity along with Dairy Farm daily traffic. It will negatively affect home prices in the area and greatly overburden an already heavily used narrow 2 lane road. If the application is approved in my opinion Jorgensen road would need an upgraded pavement with shoulders for local residential driveways to be safely exited or enter.

Response to I-47-1

Your comment has been noted. The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

I-48: Kathleen Henry

Comment I-48-1

Comment on Fire Mountain Farms Application to Apply Biosolids on Burnt Ridge Unit

Dec. 2., 2020

My husband, John Turner, and I purchased property at 1058 Burnt Ridge Road in September, 2004, adjoining the southern property line of the Burnt Ridge Unit of Fire Mountain Farms. On October 11, 2005, a 6" pipe broke, spilling biosolids in the form of partially treated human waste 2" deep over an area measuring approximately 30' by 150'. This constituted roughly 5,000-6,000 gallons of partially treated sewage which flowed over our back yard, about 75' from our well head.

We informed Bob and Martha Thodes, the owner-operators of the Burnt Ridge Unit of Fire Mountain Farms, of the spill and asked them to take responsibility for cleaning it and evaluating for contamination of our well water. They responded by flushing the spill with water in an attempt to move it further downhill, and declined to take any further action. We called the Washington State Department of Ecology, and found that the Thodes had not taken responsibility for reporting the spill.

The Department of Ecology put us in contact with the regional biosolids coordinator for Lewis County, Wyn Hoffman, who put us in contact with Chris Cooper, the Coordinator for the Lewis County Environmental Health and Community Assessment. Ms. Cooper measured our well water for contaminants from the spill, which fortunately was negative. She also applied burlap bags around the lower edge of the biosolids flow, in an attempt to keep it from running into a private fishing and swimming pond downhill from the spill.

At that time, we discussed with Ms. Cooper options of preventing similar spills in the future. These included barring continued/future use of the Burnt Ridge Unit for biosolid applications due to the steep gradient (>15%) of that property and the adjoining properties. We have since learned that there was a similar spill from the Burnt Ridge Unit onto another private property owned by Ted Trulson, whose property is also directly south of the Burnt Ridge Unit, with a similar slope of >15%.

I sincerely hope that Fire Mountain Farms will not be re-permitted for biosolid applications at the Burnt Ridge Unit, as there have been at least two significant spills of partially treated sewage (aka biosolids) over two adjoining private properties. Due to the position of Fire Mountain Farms at the top of a steep hill of >15% slope, with three privately owned properties directly downhill from them, it is apparent this is not a suitable site for biosolid applications. In addition, the Thodes have shown that they do not take personal responsibility for reporting spills, as required by the state, or for assessing or mitigating any damage to neighboring property related to spills.

Response to I-48-1

Thank you for bringing forward this information. Because of their past violation and comments like yours, several additional and more stringent requirements have been added to the agreed order requirements. This includes a 200 foot application buffer from the property mentioned in this comment, as well as the prohibition of liquid application of biosolids on fields the adjacent fields, BR-13 and BR-14.

I-49: Jonathan Marsh

Comment I-49-1

PLEASE INCLUDE AND/OR ADDRESS MY COMMENTS REGARDING BISOLID ACTIVITIES AT BURNT RIDGE RANCH UNIT (BRRU).

MY COMMENTS ARE DIVIDED INTO 4 SECTIONS

SECTION 1 = COMMENT ON LANDAU REPORT

SECTION 2 = COMMENT ON AGREED ORDER CONDITIONS

SECTION 3 = COMMENT ON SEPA ENVIRONMENTAL CHECKLIST

SECTION 4 = A PARTIAL LIST OF PROFESSIONAL BACKGROUND

BRRU = BURNT RIDGE RANCH UNIT (SEPA CHECKLIST)

C = COMMENT

SECTION 1

SOIL CHARACTERIZATION REPORT

FIRE MOUNTAIN FARMS AGRICULTURAL FIELDS

LEWIS COUNTY, WASHINGTON

DECEMBER 22, 2016 BY LANDAU ASSOCIATES

1.0 INTRODUCTION

"BURNT RIDGE FIELDS (17 FIELDS; 234 ACRES)

2.0 SOIL SAMPLING PROCEDURES

"COLLECTING NEAR SURFACE GRAB SAMPLES AT A RATE OF APPROXIMATELY 1 FOR EACH 5 ACRES AND COMBINING 8 TO 16 SAMPLES REPRESENTING APPROXIMATELY 37 TO 78 ACRES INTO A SINGLE COMPOSITE SAMPLE."

-SAMPLES TO DEPTH OF TILLING 6 TO 9 INCHES BGS (BELOW SURFACE GRADE)

-BURNT RIDGE FIELDS = 43 GRAB SAMPLES

4 COMPOSITE SAMPLES

C = COMMENT THIS REPORT FAILS TO ADDRESS THE GEOHYDROLOGY OF BURNT RIDGE AS EVIDENCED BY 4 PROPERTIES

3 IN A ROW (CONSECUTIVE) & 1 JUST BEYOND 450 BURNT RIDGE RD (MY PROPERTY), MY NEIGHBOR TO THE NORTH, MY NEIGHBOR TO THE SOUTH, AND MY NEIGHBOR 2 PROPERTIES SOUTH OF MY NEIGHBOR TO THE SOUTH. ALL 4 PROPERTIES EXHIBIT GROUNDWATER RESURFACING DOWNSLOPE (SOME ARTESIAN = UNDER PRESSURE). THIS GROUNDWATER RESURFACING IS READILY EVIDENT DURING THE RAINY SEASON. I PERSONALLY DUG ABOUT 1,500 HOLES TO PLANT DECIDUOUS AND CONIFEROUS TREES. EACH HOLES DEPTH WAS FROM 18 INCH TO 36 INCH WITH VARYING WIDTH (BOTTOM 12 INCH DIAMETER TO TOP 36 INCH DIAMETER). THE LOAMY SILT SURFACE SOIL THICKNESS RANGED FROM 12 INCH TO OVER 36 INCH. THE UNDERLYING SOIL WAS HARDPAN (VERY DENSE -VERY HARD). THE INTERFACE OF THESE 2 SOIL TYPES WAS/IS AN IMPERMEABLE SURFACE RESULTING IN ANISOTROPIC GROUNDWATER FLOW (GROUNDWATER FLOWS DOWNSLOPE THROUGH SURFACE SOILS OVER THIS IMPERMEABLE BARRIER) THAT RESURFACES DOWNSLOPE. THIS GROUNDWATER FLOW HAS CREATED SUBSURFACE "OPEN CHANNELS" THAT SURFACE DOWNSLOPE. MY PROPERTY IS 11.04 ACRES AND RANGES IN ELEVATION FROM 1070 FT TO 960 FT. AREAS WHERE GROUNDWATER RESURFACE ARE ISOLATED SMALL PATCHES OF SURFACE AREA. CONTAMINATED SOILS PLACED UPSLOPE ON THESE SOILS CAN LEACH INTO UPPER SOIL GROUNDWATER AND FLOW DOWNSLOPE RESURFACING. IN OTHER WORDS, DOWNSLOPE CONTAMINATION "INTENSITY" CAN VARY SIGNIFICANTLY AMONG AREAS WITH NO GROUNDWATER RESURFACING, AND AREAS WITH GROUNDWATER RESURFACING.

THIS REPORT FAILS TO ADDRESS RECENT RAINY SEASON OCCURRING INTO MARCH, APRIL, MAY, AND JUNE.

PLEASE NOTE WHEN I WAS A LICENSED CIVIL ENGINEER PRACTICING GEOTECHNICAL ENGINEERING, I WAS DIRECTLY INVOLVED IN LITIGATION REGARDING GROUNDWATER FLOW WITHIN SOILS ON SLOPES SIMILAR TO BURNT RIDGE.

QUESTIONS

-ARE LOCATIONS OF SOME OF THE SOIL GRAB SAMPLES FROM AREAS WHERE GROUNDWATER RESURFACED?

-WERE THESE SOIL SAMPLES SEPARATED FROM OTHER SOIL SAMPLES AND SEPARATELY TESTED TO DISTINGUISH THE DIFFERENCE BETWEEN AREAS WHERE GROUNDWATER SURFACES, AND AREAS WHERE NO GROUNDWATER RESURFACES?

-WHAT EVIDENCE DOES ECOLOGY HAVE THAT SAYS "THERE IS NO DIFFERENCE IN SOIL SAMPLING CONTAMINATION INTENSITY" BETWEEN AREAS OF GROUNDWATER RESURFACING, AND AREAS WHERE NO GROUNDWATER RESURFACES?

-DO "SINGLE COMPOSITE SAMPLES" DISTINGUISH BETWEEN SOILS FROM GROUNDWATER RESURFACE AREAS, AND SOILS FROM NO GROUNDWATER RESURFACE AREAS?

Response to I-49-1

The sole purpose of the December 2016, Soil Characterization report prepared by Landau Associates was to determine whether contamination from benzene and toluene was present from the land application of delisted waste as required by Administrative Order No. 10938 issued by Ecology to Emerald Kalama Chemical and Fire Mountain Farms. Composite soil sample results were compared to the Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use (MTCA cleanup levels). Soil results were non-detect for benzene with laboratory reporting limits less than or equal to 3.32 micrograms per kilogram ($\mu\text{g/kg}$) for all composite samples. The MTCA cleanup level for benzene is 30 $\mu\text{g/kg}$. Toluene was detected in all samples above the laboratory reporting limit but below the MTCA cleanup level of 700 $\mu\text{g/kg}$. The greatest concentration of toluene detected in a composite sample was 21.7 $\mu\text{g/kg}$. The soil being below the MTCA cleanup level for both substances is what enabled Fire Mountain Farms to reapply for coverage at these Lewis County sites.

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Biosolids are to only be applied at these 5 Lewis County sites when there is no hydrological connection to groundwater. This is accomplished by requiring groundwater to be at least 3 feet from the ground's surface before land applying biosolids. The reduced application window and required low risk for potential surface runoff are additional management practices required to further protect water resources. There is no distinction made between areas where groundwater resurfaces and where it does not because biosolids are being applied to the land's surface when there is no hydrological connection with groundwater. The required fall soil samples are also to be collected before the soil becomes saturated with 5 inches of rain after September 1st of each year.

Comment I-49-2

AGREED ORDER CONDITIONS -SECTION 2

REQUEST THE FOLLOWING BE ADDED TO ITEM 12. BURNT RIDGE UNIT OR ADDRESSED BY ECOLOGY.

h) BIOSOLID APPLICATION WINDOW WILL BE MARCH 1 -OCTOBER 31 ANNUALLY (SEPA CHECKLIST ITEM 69)

QUESTIONS -IS IT THE INTENT OF ECOLOGY TO LIMIT APPLICATION OF BIOSOLIDS TO "NON-RAINY"CONDITIONS? (SEE COMMENT LANDAU REPORT ON RAINS EXTENDING INTO JUNE)

-- CAN BIOSOLIDS BE APPLIED AFTER MARCH 1 IF FREQUENT SHOWERS AND/OR RAIN IS OCCURRING INTO JUNE, OR BEYOND MARCH 1?

i) AT LEAST 3 DAYS PRIOR TO BIOSOLID APPLICATIONS, RESIDENTS ON BURNT RIDGE RD SHALL BE NOTIFIED SO THAT VIDEO RECORDINGS OF BIOSOLID ACTIVITIES CAN BE TAKEN.

j) ALL EQUIPMENT AND TRUCKS LEAVING THE SITE SHALL BE THOROUGHLY WASHED CLEAN OF ANY BIOSOLID RESIDUE INCLUDING THE TIRE AND UNDERNEATH BEFORE LEAVING THE SITE TO PREVENT ANY RESIDUE TO BE TRANSPORTED OFFSITE AND CONTAMINATING BEYOND SITE PROPERTY (SEE SEPA CHECKLIST A.11)

k) FREQUENCY OF SAMPLING & NUMBER OF SAMPLES

BASED ON MY EXPERIENCE OF PREPARE & PREVENT RATHER THAN REPAIR & REPENT, SAMPLING OF BIOSOLID APPLICATIONS SHALL OCCUR WITHIN 1 WEEK AFTER BIOSOLID APPLICATION OF AT LEAST 1 GRAB SAMPLE PER ACRE WHICH MAY BE COMBINED INTO A SINGLE COMPOSITE SAMPLE. RESULTS OF THIS SAMPLING & TESTING SHALL BE MADE AVAILABLE TO ANY RESIDENT LIVING ON BURNT RIDGE SHOULD ANY RESIDENT REQUEST SUCH.

PLEASE NOTE CERTIFIED ORGANICS OPERATIONS AND NON-CERTIFIED AGRICULTURAL OPERATIONS EXIST ALONG BURNT RIDGE RD. WHERE OUR CUSTOMERS EXPECT SAFE & UNCONTAMINATED PRODUCTS.

Response to I-49-2

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>.

Public notice requirements for the proposed biosolids land application sites have met the requirements of chapter 173-308 WAC section 310 (13)⁴⁵ of the Biosolids Management Rule. According to the rule, Fire Mountain Farms issued a notice in a newspaper of general circulation

⁴⁵ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-310>

in Lewis County, where they propose to land apply class B biosolids. This notice was published in the Chronicle on October 15th, 2020. Public comments were accepted by Ecology for 55 days, instead of the minimum of 30 days, following the issuance of newspaper notice until December 2nd, 2020. Ecology also held a virtual public meeting to inform the public of the proposal, and to receive public testimonies on November 18th, 2020. No additional public notice requirements will be required prior to individual land application activities.

The following condition has been added to the Additional and More Stringent Conditions: Biosolids must not be tracked onto roadways surrounding permitted properties. FMF must provide documentation to Ecology on how they plan to responsibly ensure this does not happen.

For biosolids application sites west of the Cascade mountains, we follow guidance from Oregon State University on conducting soil nitrate testing for compliance in the fall before the soil has become saturated with water (Sullivan and Cogger 2003). Additionally, guidance from the University of Idaho is used to determine the appropriate number of grab samples required per field and how to composite them into a single sample (Mahler and Tindall). For additional information on the soil monitoring occurring at these sites, please contact the biosolids coordinator or submit a public records request at <https://tinyurl.com/vjwpk0ud>.

Sullivan DM and CG Cogger. 2003. Post-harvest Soil Nitrate Testing for Manured Cropping Systems West of the Cascades. Oregon State University Extension Service: EM 8832-E.

Mahler RL and TA Tindall. Soil Sampling. University of Idaho Cooperative Extension System: Bulletin 704.

Comment I-49-3

A. BACKGROUND

8. AS BIOSOLIDS WITH CONTAMINANTS WERE DISCOVERED AND “ADDRESSED” AT THE BRRU

C => DOES “ADDRESSED” INCLUDE SOIL SAMPLING & TESTING AT GROUNDWATER RESURFACING AREAS?

9. BRRU “ HAS RECEIVED ECOLOGY APPROVAL TO MOVE FORWARD , BUT HAS NOT YET COMPLETED THE WORK DESCRIBED IN SAID CLOSURE PLAN.”

C => HAS THIS WORK BEEN COMPLETED INCLUDING MY COMMENT ON THE LANDAU REPORT?

11. “BIOSOLIDS WILL BE APPLIED”

C => WILL THIS INCLUDE SAFETY PRECAUTIONS PER MY COMMENT ON ITEM ?) AGREED ORDER CONDITIONS?

12. “BRT -5: HAS SLOPES THAT ARE TOO STEEP TO PREVENT CONTAMINATION OF WATER SOURCE IN RAVINE.” AND

“BR -6: INSUFFICIENT INFORMATION WAS PROVIDED IN SSLAP FOR ECOLOGY TO DETERMINE THAT SURFACE WATER CONTAMINATION WOULD BE PREVENTED.”

C => REALLY?

THE LANDAU REPORT FAILED TO ADDRESS CONTAMINANT FLOW WITHIN GROUNDWATER SHOWING UP AT RESURFACING OUTFLOW LOCATIONS INCLUDING THE SAMPLING & TEST OF.

HOW DOES ECOLOGY SUPPORT THIS CLAIM?

C => WE REQUIRE ADDITIONAL & MORE FREQUENT SOIL SAMPLING & TESTING (SEE ITEM K) COMMENT ON AGREED ORDER CONDITIONS)

B. ENVIRONMENTAL ELEMENTS

1. EARTH

f. -"EROSION IS UNLIKELY"

EROSION CAN AND DOES OCCUR ON MY PROPERTY WITHOUT A VEGETATIVE COVER. APPLIED BIOSOLIDS AFTER MARCH 1 (SEE LANDAU REPORT COMMENT ON RAINS INTO JUNE) CAN START AS RILLS & GROW TO LARGER FLOW CHANNELS CARRYING BIOSOLID INGREDIENTS DOWNSLOPE BEYOND APPLIED AREA.

QUESTION -DID ECOLOGY ADDRESS THIS?

1 b) COMMENT -SUBSURFACE WATER FLOW WITHIN THE UPPER SILT SOILS OVERLYING HARDPAN EXISTS ON BURNT RIDGE (SEE LANDAU REPORT COMMENT). C => THIS PARAGRAPH MUST ADDRESS ACTUAL GROUNDWATER FLOW EXISTING CONDITIONS.

3. WATER

b. GROUNDWATER

C => ADD "3) GROUNDWATER DOES FLOW WITHIN SURFACE SILTY SOILS OVERLYING HARDPAN AND RESURFACES DOWNSLOPE (SEE LANDAU REPORT COMMENT). ECOLOGY -CAN YOU REFUTE GROUNDWATER FLOW? GIVE EVIDENCE, BECAUSE I'LL SHOW YOU WHERE GROUNDWATER RESURFACES ON 4 PROPERTIES ON BURNT RIDGE.

d. "PROPOSED MEASURES TO REDUCE OR CONTROL SURFACE, GROUND, AND RUN OFF WATER, AND DRAINAGE PATTERN IMPACTS, IF ANY:"

BRRU

C => AGRICULTURAL BEST MANAGEMENT PRACTICES WILL NOT PREVENT BIOSOLID OR CONTAMINANT TRANSPORT FROM APPLIED AREAS AS EVIDENCED BY GROUNDWATER RESURFACING ON A MINIMUM 4 PROPERTIES ON BURNT RIDGE. THIS NEEDS ADDRESS.

4. PLANTS

a. C => PLEASE ADD -> I GROW AND PLANTED DECIDUOUS AND CONIFEROUS TREES AND HAVE A GRASS COVER, AND GROUNDWATER STILL RESURFACES ON THE LOWER PART OF MY LAND. 3 NEIGHBORS ALSO HAVE SAME CONDITIONS -SOME ARTESIAN.

d. BRRU "NO LANDSCAPING IS PLANTED FOR THIS SITE."

C => PLANTS TRANSPIRE WATER VAPOR ORIGINATING WITHIN ROOT SYSTEM (IMPROVES SLOPE STABILITY)

C => WHY IS LANDSCAPING NOT REQUIRED?

7. ENVIRONMENTAL HEALTH

a. BRRU

COMMENT => GROUNDWATER RESURFACING DOWNSLOPE CAN CREATE A CONCENTRATED CONTAMINATION BEYOND THE APPLIED SITE. SAMPLING & TESTING AT THESE GROUNDWATER RESURFACING SITE SHOULD BE REQUIRED TO CONFIRM CONTAMINANTS ARE NOT BEING TRANSPORTED BEYOND THE APPLIED SITE.

a. 1) BRRU => "APPLIED FERTILIZER RECLASSIFIED FROM SOLID WASTE TO HAZARDOUS WASTE."

C => WHAT EVIDENCE DOES ECOLOGY HAVE OF NO CONTAMINATED GROUNDWATER THAT MAY HAVE FLOWED DOWNSLOPE AND RESURFACED?

7. a. 5) "PROPOSED MEASURES TO REDUCE OR CONTROL ENVIRONMENTAL HEALTH HAZARDS, IF ANY:"

BRRU "HUMANS ARE AT LITTLE RISK FROM BIOSOLIDS-BORNE PATHOGENS WHEN BIOSOLIDS ARE PROPERLY TREATED AND HANDLED"

C => AGREE ON "PATHOGENS."WHAT ABOUT THE BIOSOLIDS WITHOUT PATHOGENS?

8. LAND AND SHORELINE USE

a. BRRU "ADJACENT PARCELS FOR SITE INCLUDE AND RURAL RESIDENTIAL"

C => IS THE DOE STATING ANY FUTURE ADJACENT CERTIFIED ORGANIC OPERATION OR RESIDENCE WILL NEVER BE IMPACTED?

GROUNDWATER RESURFACING IS NOWHERE ADDRESSED IN ANY REPORT (ALL) REGARDING BIOSOLIDS APPLICATIONS.

b. 1) "THIS LAND HAS AND WILL CONTINUE IN AGRICULTURAL AND FORESTRY PRODUCTION. THIS PROJECT WILL INCREASE THE ECONOMIC VIABILITY OF HISTORICAL AGRICULTURE AND FORESTRY USE, BY INCREASING THE PRODUCTIVITY OF THE SOIL."

C => DOES ECOLOGY HAVE VERIFIABLE EVIDENCE OF PRIOR CONTAMINATION TO TALLY REPOSED INCLUDING GROUNDWATER RESURFACING SITE?

8. h. BRRU

"LEWIS COUNTY HAS DESIGNATED, HYDRIC SOILS, CRITICAL AQUIFER RECHARGE AREA, STEEP SLOPES, WETLANDS WITHIN THE SITE."

C => SEE ABOVE

8. L. PROPOSED MEASURES BRRU "PROPOSAL WILL IMPROVE THE ECONOMIC VIABILITY OF THE CURRENT AGRICULTURAL USES, PROVIDING ADDED INCENTIVE TO KEEP THIS LAND IN NATURAL RESOURCE PRODUCTION."

C => SEE ABOVE

8. M. "LONG TERM IMPACTS OF COMMERCIAL SIGNIFICANCE"

C => WILL THERE BE A SUFFICIENT NUMBER AND SUFFICIENT WITH TIME, SAMPLING & TESTING TO VERIFY "LONG TERM IMPACTS"?

14. TRANSPORTATION

F. VEHICULAR LOAD

BRRU = 1-10 TRUCKS PER DAY

"AS AN EXCEPTION, IT IS POSSIBLE TO HAVE A LARGE NUMBER OF TRUCKS PER DAY"

C => SEE COMMENT ?) TO AGREED ORDER CONDITIONS

"ECOLOGY COMMENTS = FIRE MOUNTAIN FARMS WILL DOCUMENT THAT GROUNDWATER IS GREATER THAN 3 FEET FROM THE GROUND SURFACE BEFORE THE BIOSOLIDS APPLICATION AT THE GROUNDWATER POINTS DOCUMENTED."

C => HAS A GEOTECHNICAL ENGINEER (LICENSED P.E.) PERFORMED SOIL BORINGS AT BRRU IN ACCORDANCE WITH ASTM D1452 WITH SAMPLING INTERVALS AT 2 ½ FEET USING ASTM D2488 SOIL DESCRIPTIONS? AT LEAST 2 PENETRATIONS INTO SOILS WITH BLOW COUNTS GREATER THAN 40.

C => HOW DOES ECOLOGY KNOW ANY AREA OTHER THAN "GROUNDWATER POINTS DOCUMENTED" HAS SURFACE SOIL THICKNESSES OF LESS THAN 3 FEET? SEE MY LANDAU ASSOCIATE COMMENTS ON SURFACE SOIL THICKNESS OF 12 INCHES OR LESS THAN 3 FEET.

Response to I-49-3

For the first part of your comment please see response to I-49-1 for the response you made to a similar comment above about soil sampling.

As per the Additional and More Stringent Conditions, land application of biosolids cannot begin at the Burnt Ridge, Big Hanaford and Newaukum Prairie units until all delisted Emerald Kalama Chemical (EKC) waste has been removed from that unit and Fire Mountain Farms has received a clean closure approval issued by Ecology for that unit.

The following condition has been added to the Additional and More Stringent Conditions: Biosolids must not be tracked onto roadways surrounding permitted properties. FMF must provide documentation to Ecology on how they plan to responsibly ensure this does not happen.

The purpose of the Landau report was to compare composite soil sample results to the Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use (MTCA cleanup levels).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels before heavy winter rains will be sufficient to determine if over-application occurred.

The question asked in the SEPA checklist is "Could erosion occur as a result of clearing, construction, or use?" This question is asking if erosion will occur as a result of the proposed project. There is what appears to be regular erosion occurring due to the presence of steep slopes on some of the Burnt Ridge fields. The use of biosolids has been shown to increase organic matter in the soil surface, which reduces erosion. This is because soil aggregates are less likely to break down into smaller particles that can be carried away by water or wind. Additionally, the added organic matter increases moisture retention, which also decreases soil erosion, as well as decreasing surface water runoff. The application of biosolids to the Burnt Ridge unit will not cause additional erosion.

To prevent contamination of groundwater, Fire Mountain Farms must ensure that the groundwater is at least 3 feet from the surface before applying biosolids to the land. Additionally, these units have reduced application windows to ensure biosolids application is occurring during the dryer parts of the year:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Additionally, all biosolids applications must be applied at an agronomic rate, which is determined by the crop's need for nitrogen. This protects groundwater from the risk of nitrate contamination. Agronomic rates must be sent to the biosolids coordinator for evaluation before land application of biosolids can begin. When biosolids are land applied according to these conditions the risk to groundwater contamination is considered a very low. Several of your questions were different variations of the same question, so I have only provided the answer here once.

Additional landscaping is not a requirement for this project because the land is not being converted to a non-agricultural use.

Biosolids that are considered virtually pathogen free are considered exceptional quality biosolids and are not subject to the same site management and access restrictions as Class B biosolids.

Ecology was provided evidence that soil contamination had not occurred in the 2016 Soil Characterization report provided by Landau Associates. Please review the response to response to I-49-1 for the response you made to a similar comment above about whether contamination was found onsite.

The criteria listed in the SEPA checklist states there will be an estimated 8 weeks of activity occurring at each site during the land application season, which may be spread over 1-3 applications per season, with between 1 – 10 trucks operating per day.

Impacts to traffic and roads are not within the jurisdiction of Ecology. The roads leading to the site are owned and maintained by Lewis County. The county did not identify any concerns regarding the proposal during the public comment period. They were contacted again during the evaluation of comments and did not provide opposition to the additional traffic that Fire Mountain Farms estimated in this project's SEPA checklist. Please contact Lewis County officials if you still have concerns regarding traffic and roads.

The biosolids rule, WAC 173-308,⁴⁶ does not require soil borings to be performed by a geotechnical engineer at the specifications you have mentioned above.

Each unit has several groundwater depth monitoring points. A licenced hydrogeologist has deemed the placement of these monitoring points as sufficient to determine whether groundwater is at least three feet from the ground's surface.

Comment I-49-4

SECTION 4

PARTIAL LIST OF JONATHON MARSH BACKGROUND

- NEW YORK STATE CERTIFIED OPERATOR FOR GRADE II
- ALL TYPES WASTEWATER TREATMENT AND CERTAIN RELATED LABORATORY ANALYSIS
- NEW YORK STATE CERTIFIED GRADE A WATER PLANT OPERATOR INCLUDING LABORATORY ANALYSIS
- 17 YEAR ACTIVE MEMBER AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), COMMITTEE
- ,ñ° 18 SOIL & ROCK, SUBCOMMITTEES
- ,ñ° 18.02 SAMPLING & RELATED TESTS
- ,ñ° 18.04 DYNAMIC PROPERTIES
- ,ñ° 18.18 PEAT & ORGANIC SOILS

NOTE -I ALSO INITIATED EXPANDING THE DEFINITIONS OF ORGANIC SOILS IN ASTM D 2488 TO BETTER PREDICT HYDRAULIC BEHAVIOR WITH ORGANIC SOILS

- LICENSED CIVIL ENGINEER, #27705 (WASHINGTON STATE), AS I RETIRED 2007, I DISCONTINUED MY LICENSE EFFECTIVE SEPTEMBER 2018
- CERTIFIED FOR HEALTH & SAFETY AT HAZARDOUS WASTE SITES
- AS A GEO TECHNICAL ENGINEER, I WAS **DIRECTLY INVOLVED** IN LITIGATION REGARDING THE FLOW OF GROUNDWATER WITHIN SLOPES (BURNT RIDGE HAS VERY SIMILAR CONDITIONS)

⁴⁶ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

Response to I-49-4

Comment noted. Thank you for participating in the public comment period.

I-50: Brian Thompson

Comment I-50-1

Fire Mountain Farms has been applying biosolids next door to my properties for years with no issues. Their issues in the past were more due to changes in Ecology's rules than any deliberate violations of the rule by Fire Mountain. I support the use of biosolids as a fertility use on agricultural land.

Response to I-50-1

Thank you for submitting a comment. Your comment has been noted.

I-51: Bob Guenther

Comment I-51-1

Storage: I am concerned that the SEPA checklist submitted by FMF in July of 2020 didn't include sufficient information to evaluate long -term storage of biosolids in any of the units. I believe the reason is as stated by Ryan Thode on November 17th 2020 vector smell occurs when anaerobic to aerobic. Storage in the bunker or the (non permitted lagoon at NP) has been a BIG problem for me for many years. DOE should determine six weeks storage will not allow the change. (alternative might be class A biosolids) I also want to point out that I believe application until October 31st is way too late in the growing season and will not allow the uptake into plant life of applied material, therefore a good portion of the material will flow to the nearby streams at every location during the winter cycle of 42 inches of rain. I agree that by spring there is enough of the material left on the ground to grow grass all summer. One problem FM has is they cannot get wheel tractors on some of the fields until mid summer to spread. When the hay is baled there is a dust cloud behind the equipment (round baler creates less dust) I have pictures to prove this. We should protect cattle and the Chehalis River Basin from eating this.

Response to I-51-1

Ecology agrees that insufficient information was provided to evaluate long term storage, which is why no long term storage was approved for any of the units. This includes both lagoons and storage bunkers. The maximum six weeks of staging refers to the act of accumulating and storing biosolids in a field until enough has been accumulated to land apply. If rain is projected to occur during the time biosolids are staged in a field, the piles must be covered with a tarp or other non-permeable barrier to prevent surface runoff or leaching.

If Fire Mountain Farms wants to add long-term storage to these units at a future date this would be considered a significant change to their permit. Storage facilities would need to be inspected to make sure their structural integrity is in-tact. Additionally, another SEPA evaluation would need to be conducted and everyone on the their Lewis County Interested Parties List (IPL) would need to be notified so they have the opportunity to submit comments. Everyone who has submitted a comment during this comment period has been added to their IPL.

Comment I-51-2

Late Season Application: At the Newaukum site I know the land all slopes towards the Newaukum River and there are at least two, year round creeks that flow through the site. There was an attempt at my north border to divert the creek from its natural path through the bunker, lagoon, and building area to the East along my fence line. (I will refer to this creek in my wrap up) The application up until October 31st is too late to prevent runoff to the Newaukum River. At the Hanaford Rd site the field is flooded much of the winter you folks should take a look at that site during the winter there are also creeks running alongside and through the site The runoff to the Skookumchuck River is happening in my opinion. As stated item one this ground is very wet for most of the year with a limited time to farm it. With the statement about MSA advisory information is helpful for the week the spreading is taking place I contend the material is on the ground and running off during the next storm or 40 inches of rain over the winter months. One of the problems FM has is the wet ground they have to apply material on; they cannot farm it until late spring for the most part. At the Burnt Ridge site the DOE has described steep slopes that will not allow application. HOWEVER I know the application in late season up until October 31st is not satisfactory. With 40 inches of rain the bulk of the material is washed down hill to the creeks and Newaukum river system. I am not sure of the lay of the land but some could go into the Cowlitz river system if on the south and east side of the dividing ridge. I believe DOE will know the answer to this question.

Response to I-51-2

Between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. Approval is not guaranteed.

Comment I-51-3

Odors: Odor is a constant problem during application. I have complained for many years about this, and have been told it is just the way the wind blows. (Peter Lyon DOE) I contend that at most sites this has been a problem for the neighbors. I have noticed the DOE many times about odor problems. I know others have complained about this. I had a County Commissioner come out to investigate what I was talking about. He upchucked in the ditch(Dennis Hadler), DOE has heard about and also received it in writing. A longtime pro biosolids person (Tony Shelter Adna) didn't have any problem until application was next to his place, he then called me and asked what I could do about the smell it was making him and his family ill. I cannot prove the cause but my wife has had much less chronic bronchitis the last several years since application has been halted at Newaukum Prairie. The investigation by DOE must take place when application happens. I have had Lori Davies (DOE) on my deck several days after application. She was not here when being applied. As far as injection of biosolids I have witnessed this method conducted by FM at the South Western corner of NP I saw the biosolids injected then resurface as the clay soil closed back in on the injected material. On that day I saw the material migrate into the ditch of State Highway 508. Perhaps there is a new method of injection that I have not seen I have not seen the attempt to inject since. In order to eliminate or greatly reduce the odor the material must not be allowed to sit at the site 6 weeks and must be tilled into the soil when it comes to the site. When I visited the SWWAPCA meeting I was told that in the Vancouver area this was what was happening and had very little complaint about odor. I also witnessed tilling in at Newaukum Prairie and the odor was gone in a few hours. The problem remains as Ryan Thode stated anaerobic to aerobic. To reduce the odor a suggestion would be to apply type A biosolids and get it in the ground as it arrives. I also believe there are instruments to measure

odor or vector problems. I also want to point out that when material was being dumped into the lagoon the odor was so strong it penetrated my house the lagoon was one big aerobic cesspool without proper aeration.

Response to I-51-3

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-51-4

Western Washington Biosolids Management Matrix: I am sure a lot of work has gone into the development of this Matrix. HOWEVER DOE in considering slope and applications should not allow material to lay on the surface for the winter rains to wash the bulk of the liquid material into the streams and rivers of the Chehalis basin over the winter months. I believe the application of biosolids to the land should go to where there is less than 15 inches of rain per year and tilled into the soil as it arrives. I realize delivery costs to the dry climate will cost more. We need to protect our Western Streams. At the NP, BR Lincoln Creek and Hanaford sites are high risk to water quality standards some has been quantified by test and monitoring wells around the sites.

Response to I-51-4

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units

- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. Land application is only allowed to proceed if there is a low risk for surface runoff. For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the MSA, upcoming weather data, and additional supporting documentation if requested by Ecology. The MSA can be found at <https://www.wadairyplan.org/MSA>. Approval to land apply in October is not guaranteed.

Comment I-51-5

Timber Production: I know that Bob Thode's brother in law stopped any application on his timber land of biosolids. (BILL Logan) I would caution approval of material on timberland and worry about the runoff into streams.

Timber Production: I know that Weyerhaeuser Company has other methods to fertilize their tree farm. I am not for spreading biosolids on timberland.

Response to I-51-5

Thank you for the information you have provided. Fire Mountain Farms (FMF) has submitted landowner agreements for all properties not owned by them. All current landowners have consented to having biosolids applied to their properties. Prior to conducting application of biosolids to timber land though, FMF must update its Site Specific Land Application Plans (SSLAPs) to include an explanation of the timber crop's agronomic need in relation to the timber's life cycle and it's intended end use (consistent with the final use that might be reflected in a Forest Management Plan under RCW 83.34).⁴⁷ The updated SSLAPs must be approved by Ecology prior to conducting application of biosolids to timbered portions of a unit. This is to ensure that SSLAPs for sites that include timber meet the requirements for WAC 173-308-90003(2) and (3)⁴⁸ to ensure compliance with WAC 173-308-190.⁴⁹

Comment I-51-6

Spill Prevention and Response Plan: I have witnessed many time spills on the state Highway 508, over the years have submitted many pictures of these incidents I am glad to see that DOE has recognized this as a problem, I should not have to walk through these spills to get my mail, I have submitted pictures of this problem. In the first few years at the NP site material was being tracked as much as 1/2 mile to the west on the highway. I don't believe the NP site had a good method of controlling the biosolids after it was dumped and placed into the dry storage. (where it became aerobic) Also was somewhat less tracking once the lagoon came on line. Spills On the highway lessened due to the use of the lagoon, which was just an improperly aerated cesspool of about 3 million gallons. I have worked around a sewage treatment plant. My guess would be that at least 150 hp of pumps would be needed to properly aerate this lagoon. (As far as I know Lewis County Never Issued a permit for this lagoon in the first place)

⁴⁷ <https://apps.leg.wa.gov/rcw/default.aspx?cite=84.34>

⁴⁸ <https://apps.leg.wa.gov/wac/default.aspx?dispo=true&cite=173-308>

⁴⁹ <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308-190>

Response to I-51-6

Thank you for your comment. Biosolids must always be cleaned up if it is tracked onto public roadways. A Spill Prevention and Response Plan (SPRP) must always be used whenever transporting biosolids. If you see biosolids being tracked onto the roadway at any site, please contact the southwest regional biosolids coordinator immediately to report your observations.

Comment I-51-7

Holiday Restrictions: I am happy to see this noted for many years application during holidays has been a problem. FM said they would start observing this after complaints to the manager of DOE when people from Olympia had to leave our social gatherings because of the odor. HOWEVER when material was being dumped into the lagoon the surface was broken and the the whole neighborhood would be stunk up because of the un-aerated lagoon even on the weekends and holidays.

Response to I-51-7

The lagoons at the Newaukum Prairie and Burnt Ridge units were not eligible to be permitted as a part of this proposal because they still retained delisted waste from their previous infraction at the time this proposal was submitted. Additionally, Fire Mountain Farms provided insufficient information in the SEPA checklist to evaluate long term storage. Fire Mountain Farms can still request to have lagoon storage of biosolids added to these sites in the future, but they will need to undergo a new SEPA evaluation and public notice period before that could occur.

One of the additional requirements for the Newuakum Prairie and Burnt Ridge units is that land application of biosolids cannot begin at these sites until all delisted EKC waste has been removed from the site and inspected by Ecology. The removal of delisted waste has not yet been completed at these units as of the writing of this response.

Comment I-51-8

Buffers: I am glad to see you are reconsidering buffers HOWEVER if you continue to allow biosolids to be dumped on the surface of this wet ground at such late dates the liquid runoff will go for miles into the Chehalis basin. If you are going to apply you should consider tilling the material into the soil. Or take the material to an area of less rainfall.

Response to I-51-8

Thank you for your input. There are several management practices required for these sites to prevent the conditions you are concerned about. Buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffers required for these sites exceed the minimum requirement of 33 feet in the federal rule (site location) and were increased in accordance with the Biosolids Management Guidelines for Washington State.

The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced to the following:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

The ability to land apply biosolids between October 1st and 31st is conditional. It may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. This determination is based off data available from the National Resource Conservation Service. The MSA can be found at <https://www.wadairyplan.org/MSA>. Approval is not guaranteed.

Comment I-51-9

Annual Report Additions: This is great. It may be my fault but I have always had a difficult time finding out what was being dumped and where it is coming from. Over the years I complained so much to our county commission that the late county commissioner (Bill Shullie) helped us discover the Kalama Chemical material that was being dumped for nearly 18 years. It would be interesting to know just who dumped what in our county. I know there were many different smells coming from the Newaukum site.

Response to I-51-9

For additional information on the sources of Class B biosolids being applied at a land application site, please contact the biosolids coordinator or submit a public records request at <https://tinyurl.com/vjwpk0ud>.

Comment I-51-10

Big Hanaford Unit:

It looks to me that restrictions on this site is appropriate I am not sure how much is not approved. As of November 17th 2020 I was told by the the lewis county official (Bill Tietze! that removal of the delisted biosolid removal had not started is all the material in a bunker? The DOE statement about flooding is correct I have driven by this site every work day for 34 years and know how that area floods, Again I say any application in October is to late for the season. The material will flow to the Skookumchuck river. I am also interested in the statement about the application denied because of the risk of public contact? I would like to know what the contact risk is??

Response to I-51-10

One of the additional requirements for the Big Hanaford unit is that land application of biosolids cannot begin at the Big Hanaford, Burnt Ridge or Newaukum Prairie Units until all delisted EKC waste has been removed from the site and inspected by Ecology. As of the writing of this response, the delisted waste at Big Hanaford has been removed, but it has not yet been inspected by Ecology.

For land application between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. Approval is not guaranteed.

There is onsite housing in the Homesite field whose buffer area takes up most of the land

application area. Ecology determined that this is an inappropriate field for the land application of biosolids.

Comment I-51-11

Burnt Ridge Unit: The question about Dam Safety permits is this permitted through Lewis County or the State?? The buffer of 200 feet from a dwelling should be looked into at other site applications not sure this is consistent with other sites. Slopes of greater than 15% makes sense in most other sites It is quite a bit less HOWEVER the water will still wash downhill to the streams if material isn't tilled in. Yes material transportation safety of keeping material of the roadway is important as it is on all sites I have pictures to show violations at other sites. I would like to see the data from FM for DOE to approve the surface water contamination on BRT-6

Response to I-51-11

If a dam holds greater than 10 acre feet it is required to be permitted through Ecology with a Dam Safety permit. The Dam Safety Office has notified Fire Mountain Farms that they must obtain a permit since the lagoon exceeds the regulatory threshold of 10 acre feet above ground surface. Fire Mountain Farms may choose to reduce the capacity of this dam to below 10 acre feet once all the delisted waste has been removed and Ecology has confirmed this through an inspection. If the dam capacity is reduced to under 10 acre feet, a permit is no longer required by Ecology.

Biosolids must always be cleaned up if it is tracked onto public roadways. A Spill Prevention and Response Plan (SPRP) must always be used whenever transporting biosolids. An additional condition is listed for the Burnt Ridge Unit to note that Burnt Ridge and Homestead are separate units, therefore the use of a SPRP is still required even when transporting biosolids across the street. If you see biosolids being tracked onto the roadway at any site, please contact the southwest regional biosolids coordinator immediately to report your observations.

BRT-6 was not approved for land application of biosolids due to concerns of surface water contamination.

Comment I-51-12

Lincoln Creek Unit: The application window is too late in the year October 31 is too late in the year to prevent material flowing into Lincoln Creek. Years ago there were reports of biosolids flowing into Lincoln Creek king news reported this DOE should have this report on file. I would like to see the report if possible. Again the biosolid liquid will flow into Lincoln Creek even if it is a 1 % slope with 40 plus inches of rain in the winte3r and the material has not been absorbed into the grass. It is good to see that you have disqualified the LC1CREP and LCI-CRP-2 what is growing in those two areas???

Response to I-51-12

Between October 1st and 31st, land application may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. Approval is not guaranteed.

I was unable to find a record of biosolids entering Lincoln Creek to corroborate your above claim.

LC1-CREP-1 and LC1-CREP-2 are currently a part of a Conservation Reserve Enhancement Program. They do not contain a crop.

Comment I-51-13

Newaukum Prairie Unit; At this time November 25th it has been reported to me that 1600 tons of EKC has been removed from the lagoon. (We experienced no foul odors while material was being removed) This material has been stored in the lagoon 4 years. It has been my feeling that each year the entire contents of the lagoon has been applied to the fields less than 100 acres. I think that is

overdosing the land on biosolids FM hired a firm to soil test. Has DOE ever done their own testing?? This site has a lagoon that I don't believe was permitted by Lewis County. This lagoon has very little aeration capabilities. The lagoon was

leaking so a plastic liner was installed, is the DOE going to require soil samples of what is contaminated under the liner?? When the lagoon was being put into service I met with Bob Thode (FM) Kyle Dorsey, Wen Hoffman and Sue

Maurman (DOE) I stated the lagoon would leak and was told it would not leak because of the impervious clay liner the lagoon had there was no disagreement by the DOE representatives. I stated to Kyle Dorsey while he was walking around outside the lagoon that he was walking in buck brush. After the meeting DOE folks washed their boots off in the creek, got into their state care and tracked the biosolids on their tires onto the state highway and headed back to their office. I think DOE knows what kind of soil buck brush grows in. I have stated this many times to DOE. I would like to know what is growing on the land that does not have suitable biosolids application now??

Response to I-51-13

It sounds like you are curious about how Fire Mountain Farms got permission to land apply the liquid in their lagoons before it had been delisted to solids waste by Ecology and the EPA. Emerald Kalama Chemical requested a "Contained-In Determination" from Ecology, which is a request to dispose of soil or water that contains a listed dangerous waste below risk-based levels. In this case, the request was to remove the water added to the lagoon from precipitation (rain and snow) to prevent the lagoon from overflowing. Ecology approved several requests for "contained-in determination" for the precipitation that was suspended above the solids in the Burnt Ridge and Newaukum Prairie lagoons because the results of sampling showed that the benzene and toluene listed in the water was below risk-based levels.

I am uncertain if this lagoon is currently permitted by Lewis County. The use of this lagoon was not a part of this proposal. Ecology agrees that insufficient information was provided to evaluate long term storage, which is why no long term storage was approved for any of the units. This includes both lagoons and storage bunkers.

Comment I-51-14

Homestead' Unit:

I am not familiar with the Homestead unit but would agree with DOE not to track the material on the road as I have witnessed many times at the Newaukum site. As far as the 15% slope the liquid wash of 40 inches of rain will wash the material to the bottom and into the river system if not tilled in and applied no later than September 15th.

Response to I-51-14

Ecology agrees that applying biosolids during times of high precipitation unacceptably increases the risk of leaching and surface runoff of nitrates. In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units+

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

Comment I-51-15

I am very concerned about the application of biosolids under the agreement that has been reached. I believe there are better ways to dispose of the material, if DOE would require the biosolids to be tilled in and applied earlier in the year that might work. I believe the odor is a big problem and believe six weeks will allow the biosolids to become aerobic as Ryan Thode contends. The treatment plants here in Lewis produce type A biosolids, as far as I know that solves the odor problem, however it doesn't solve the pollution to our streams. Application of class B should be in an area that has less than 15 inches of rain and be tilled into the soil. Without modifications to this agreement I am not in favor of it. I also want to note that it has been pleasant not putting up with the application of biosolids at Newaukum for last several years, I have bought this land nearly 50 years ago built our home raised our family here, application of biosolids at the Newaukum site has been a nightmare for us and am in hopes there is a better way for FM to operate. Ryan Thode who has taken over the operation stated that biosolids is nothing more than a small business to augment his cattle operation, I have to disagree with the statement.

Response to I-51-15

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

The maximum six weeks of staging refers to the act of accumulating and storing biosolids in a field until enough has been accumulated to land apply. In regards to biosolids becoming anaerobic, I am uncertain if you are referring to the staging piles or the lagoon, but this should not be an issue during the six weeks allowed for staging. No long term storage was approved for any of the units, which includes the lagoon at the Newaukum Prairie unit.

I-52: David King

Comment I-52-1

This is from, David King 331 Forest Napavine Rd E. Chehalis, WA 98532.

Received the notice of Fire Mountain Farms, Land application. We are on the "Newaukum Prairie" in looking and reading all parties impacted by this and seeing the print of all the wells, for some reason our well is not included in the picture, nor is it listed with the well reports that were included.

We have two (2), wells, A hand dug well, which we abandoned when the new well was completed. The new well Started 07/19/07 Finished 07/23/07 Notice of Intent# W 236718 Unique Ecology Well Tag # AHG 761 Tax Parcel# 018125004008. Done By Roberts Well Drill, 1090 HWY603 Chehalis, WA. 98532. Driller: Kenneth Whitham

Not sure how this was over looked by our back fence line, this is where he is putting the Biosolids. We would like to know who is taking responsibility if our well is contaminated. In the last 2 permits the Dept. of Ecology was suppose to test all the wells each year, that did not happen. Since this has been going on now for close to 20 years. I do feel the testing is in the

best interest of all the well owners that are possibly affected. We do depend on that water and need it free of contamination. Feel free to contact me. Keep us on your notification list please?

Response to I-52-1

Thank you for providing the information about your wells. As part of Fire Mountain Farms additional conditions, they are required to add your wells to their maps as well as the appropriate 100 foot buffers.

Studies conclude that when biosolids are applied to the land, most compounds that might be found in biosolids don't reach groundwater. In fact, subsurface drainage and surface water runoff are often far lower in potential compound concentrations than those found in the effluent

discharge from a wastewater treatment facility (McCarthy and Loyo-Rosales 2015).

The primary concern for groundwater quality associated with biosolids land application are the soil nitrate levels. Biosolids are normally applied at an agronomic rate, which means that the crop receives only the amount of nitrogen it can absorb. During the growing process, the crop takes up the nitrogen, thus removing the nitrogen from the site when the crop is harvested. Only when more than the agronomic amount of biosolids is applied can there be excess nitrogen that eventually will be converted to nitrates, which could migrate to the groundwater (Brobst EPA). Annual monitoring of residual soil nitrate levels will help guard against groundwater pollution.

Additionally, required management practices prevent groundwater contamination. Those include confirming that groundwater is at least 3 feet from the surface before each application and limiting the application window to the drier parts of the year. This limits application to times of the year when the ground's surface is not hydrologically connected to groundwater or surface water.

Buffer zones are also used to create a barrier of non-application area between wells and where biosolids are applied. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the application site from becoming contaminated by nitrate, pathogens and trace elements.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC), Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require monitoring of offsite wells.

McCarthy LH and JE Loyo-Rosales. 2015. Risks Associated with Application of Municipal Biosolids to Agricultural Lands in a Canadian Context. Canadian Municipal Water Consortium. Ryerson University.

Brobst B. The Environmental Protection Agency. Biosolids Reference Sheet. EPA Region VIII.

I-53: Marty Ansley

Comment I-53-1

I am Mark Ansley and I am a neighbor to Fire Mountain Farms two sludge disposal sites on Burnt Ridge in the Onalaska area. My history with Bob Thode and Fire Min. Farms goes back to the beginning of the sludge operations in the late 1980's. My concerns have always centered around three consequences of Thode's operation. First is the persistent exposure to foul odor for everyone in the vicinity. These are not "transient farm odors" that last for a day or two. These are odors that are present for weeks and months.

There is scientific evidence that foul odors lower the immunoglobulin levels of people exposed to them on a persistent basis. Studies done in Britain clearly show a relationship between prolonged exposures to foul odors and depressed immune systems.

The odors place severe restrictions on the social or even business activities of Thode's neighbors. In years past I twice cancelled large family gatherings on my farm due to the persistent foul sludge odor at the lime. Customers who came to my farm to buy plants invariably commented on the stink.

Enjoyment of everyday life is dramatically diminished. Opening the windows on a sunny spring or summer morning to let in a fresh breeze (why most of us live out here) is not an option when the first scent that reaches your nostrils is foul sludge odor.

Response to I-53-1

Odors are an unfortunate side effect of many agricultural activities, and can understandably be a cause of concern for neighbors adjacent to a biosolids land application site. Ecology acknowledges that nuisance odors can have negative effects on the quality of life in communities subjected to biosolids land application. The odor is caused primarily by compounds containing sulfur and ammonia. Most odors are short lived and there is no existing scientific evidence that directly links odors from biosolids land application with serious health effects.

Management practices like property buffers, agronomic application rates, and short-term staging help control offsite-odors. Ecology is concerned about the impacts of odors on neighbors. Ecology will investigate all complaints regarding odor, believed to have originated from a biosolids application unit. Upon investigation, one or more of the following conditions may be required to mitigate offsite odors:

- The current temporary staging location may be required to be physically covered or moved to a different location.
- Land application may be terminated or a modification to application practices may be required (e.g. injection of liquid biosolids or incorporation of biosolids within 6-hours of application).
- An odor management plan may be required to continue, with either or both, temporary staging and land application of biosolids.
- No action is required if odor is within normal agricultural threshold; temporary staging and land application may continue.

Comment I-53-2

Secondly is the concern of groundwater pollution. Before Thode began spreading sludge in the late 1980's a hydrologist came around to do a preliminary test on my well to set a baseline for possible contaminants. He told me the water from my well was excellent. I asked when he would come back to check the well. He said he would be around on a " regular" basis to do testing. I never saw him again. That was thirty years ago. I also asked him when he was here if he could say for certain that the groundwater from Thode's sludge site does not flow into the groundwater I draw water from. He said, " there is no way of knowing for sure. "

Response to I-53-2

Groundwater protections are built into Ecology's Biosolids Management Program. All biosolids applications must be applied at an agronomic rate, which is determined by the crop's annual need for nitrogen. This protects groundwater from the risk of nitrate contamination. Buffer zones, which are an area where biosolids are not applied, are used to create a barrier between wells and where biosolids are applied to protect water quality. Buffer zones for wells, on both the permitted and neighboring properties, is 100 feet. This protects the groundwater under the

application site from becoming contaminated by nitrate, pathogens and trace elements. Buffer distances were determined according to the criteria in Ecology publication #93-80: Biosolids Management Guidelines for Washington State:
<https://apps.ecology.wa.gov/publications/publications/9380.pdf>.

Additional protection is present in the Groundwater Protection Plan, which is located in the Site Specific Land Application Plan for each unit. It states that Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface.

Comment I-53-3

Finally Thode's operation does severe or even catastrophic financial damage to his neighbors. Burnt Ridge is assessed at a very high level by the county. It is a very beautiful and desirable place to live. If Thode is allowed to create massive foul odor those property values would be extremely unrealistic.

If a property owner was forced to sell, they would have a difficult time even finding a buyer. Thode once told me that if I or anyone else was going to sell their property he would generously pause the sludge spreading during that period. Evidently he assumed I would be smart enough not to disclose the odor issue to a prospective buyer. Of course there are ethical and legal obligations to do so. In 1998 the Supreme Court of the state of Iowa overturned the " Right to Farm " ordinance in that state. These ordinances are created to shield farmers from consequences, legal and otherwise, the odors and other aspects of their operations might create. A largely agricultural state, the court voted 7-0 (two justices with agricultural interests recused themselves) that such ordinances constituted an " illegal easement " over the property of neighbors. They recognized the severe negative impact odors from industrial style agricultural operations have on other property owners. I and many other property owners on Burnt Ridge pre-date Thode's sludge operation so I did not " come to the nuisance, " it came to me. In conclusion, I would say that my experience with Fire Min. Farms over three decades has left me deeply distrustful of their operation. I believe they have a casual, or more accurately a monetary relationship with fact and truth.

Response to I-53-3

Ecology uses Biosolids Management Guidelines for Washington State to determine best management practices to minimize potential public exposure and odors from Class B biosolids. Typical property buffers, which are non-application areas, extend from the biosolids application area to the property line. The recommended range is from 5 to 50 feet. There are also buffers to personal residences that are at least 100 feet. Factors like distance to neighboring houses and wells, as well as accuracy of the application machinery used are considered when Ecology sets the final permit conditions for a facility.

To reduce the impact to neighbors, Ecology has also limited operation hours for biosolids land application at these sites to daylight hours (one hour after sunrise to one hour before sunset) and excludes application on federal and state holidays during the application window, including the 3 days leading up to the holiday.

The state law for real estate in Washington (RCW 64.06.022)⁵⁰ states that when selling your home you need to disclose the following information if you are in proximity to a farm or working forest: "This notice is to inform you that the real property you are considering for purchase may lie in close proximity to a farm or working forest. The operation of a farm or working forest

⁵⁰ <https://apps.leg.wa.gov/rcw/default.aspx?cite=64.06.022>

involves usual and customary agricultural practices or forest practices, which are protected under RCW 7.48.305,⁵¹ the Washington right to farm act." Ecology does not have the legal authority to require information about Class B biosolids land application to be provided at the time of sale.

I-54: Christy Tayloe

Comment I-54-1

My name is Christy Tayloe, address 1058 Burnt Ridge Road, Onalaska, Washington. And email is tigerlvt@gmail.com. And my 1st comment, it relates to what we were just talking in the Q & A, that there are so many things that we don't know about the numerous pollutants that are in biosolids and that there's not enough information on them to even know, no proper information actually. The US. Environmental Protection Agency states "the agency cannot determine whether pollutants with incomplete risk assessments are safe." So I'm a little confused about how a determination of non-significance can be made when it's clear that there is probable adverse impact to the environment.

Response to I-54-1

Your comment has been noted. Please refer to the response provided to one of you similar comments in comment I-36-17.

Comment I-54-2

Also, I have significant fears about the 20% slope above my house and my well of where this will be applied, and it does rain in March, April and May and there is erosion unlike in the sub checklist it says there's no erosion on the site, but I used to be able to get my mower up to the fence line and now I can't because the ground has eroded there. So, I'm a little confused about how that statement could be true.

Response to I-54-2

Please refer to the responses to your previous comments I-36-2 and I-36-4 for more information on erosion and surface runoff.

Comment I-54-3

Yeah, and also in regards to the odors just to point out that owners actually are particulates in the air that we breathe into our lungs. So when you don't know exactly what's in those particulates from these biosolids, like flame retardants, steroids, whatever. Actually, just pointing out that those particulates are going in our bodies. It's not just a smell. So, that's it. Thank you.

Response to I-54-3

Your comment has been noted. Please review the response provided for a similar comment you submitted in comment I-36-6.

⁵¹ <https://apps.leg.wa.gov/rcw/default.aspx?cite=7.48.305>

I-55: Henry Roberts

Comment I-55-1

Hello, my name is Henry Roberts at 482 Burnt Ridge Rd here in Onalaska. And my presentation or statement is based on transportation. I work in the transportation industry for many years. As an operations manager for a heavy hauler. Our roads were never meant to handle steady flow. I believe that they weren't ready to handle a steady flow of tankers and 18 wheel trucks, trailers that go up and down, delivering biosolids for months at a time during the sludge season. This is written by the way, as you can tell. So these tanker loads can weigh 80,000 pounds or more with multiple axels and don't stop on a dime. Most of the access roads to these 5 sites are under review are narrow, without shoulders, turn lanes or sidewalks. Most have deep drainage ditches on either side, multiple hair pin turns and blind hills where families exit their driveways. Dodging these trucks are a danger for pedestrians, cyclists, horseback riders, family, pets and wildlife. I understand that roads here will have seasonal and occasional agricultural vehicles, accessing farm fields and sporadic logging trucks when properties are cleared. But these are infrequent trips and within a limited timespan. Fire Mountain Farms biosolids delivery tankers from waste treatment plants, field application equipment and support trucks run seemingly nonstop from April through October. Year after year the noise, diesel fumes, wear and tear on our roads and traffic danger to our families is far more than a normal hay or cattle farmer would generate for the same amount of acreage farmed. How does Fire Mountain Farms compensate the county for road damage? In addition there is a real risk that these large tankers and trucks overturn and dump their loads on our roads and into a drainage ditches that feed our streams. A safety slide show presentation by Seattle solid waste shows 3 instances where biosolids tankers have overturned in the past 5 years. I respectfully request that the Department of Ecology limit the number of tanker trips, delivering biosolids to Fire Mountain Farms per month, and require them to use smaller delivery vehicles. In addition Department of Ecology should require that Fire Mountain Farms pay to create appropriate turn lanes into their facilities for public safety. Additionally, I don't know if this was a question, or it should be a question. Maybe. I put down does a department of energy require that Fire mountain farm to comply with D. O. T. regulations? And that their drivers and their personnel are qualified to haul hazardous waste. That's it.

Response to I-55-1

Thank you for submitting your comment. Please see the response provided for a similar comment you submitted in comment I-33-1.

I-56: Kay Crawford

Comment I-56-1

Kay Crawford 482 Burnt Ridge road Onalaska. I would like to address 2 issues. The 1st is to address Fire Mountain Farms past bad behavior with adjacent neighbors when a sludge spill occurred on that neighbor's property. The victims of this incident were unable to attend tonight and ask that I read their description of what occurred, which follows. "In 2004, we purchased a property, we being not us, but the people that wrote this. We purchased a property on Burnt Ridge road, just downhill from Fire Mountain Farms operation. Sometime in 2005, a pipe broke on the hill above us, and there was approximately 6000 gallon flow of partially treated bio solids from their field all over our property, including next to our house and over our well head. The owners of Fire Mountain Farms never reported the spill. We called the State Department of Ecology who sent a young woman from the county to help mitigate the spill, which extended for hundreds of feet down our hill and through our fields. In the process, the owners of fire mountain

farms never took responsibility, never helped with a cleanup or containment, and never helped with monitoring our well water, much less compensating for any damage, real or potential to our property. The young woman at the county who was helping us was trying to get the owners of Fire Mountain Farms to take responsibility for cleaning up the spill and making some type of reparations. After a few weeks she stopped returning our calls and emails and her work phone number was no longer operating. We ask that the Department of Ecology create a list of immediate, clean up procedures for spills and mitigation for damages, caused to impacted property owners. Including a timeline for prompt response by Fire Mountain Farms as soon as a neighbor contacts them. In addition we ask that Ecology, holds fire mountain farms, financially responsible for all mitigation and cleanup activities, including well testing for at least a year.”

Response to I-56-1

Thank you for bringing forward this information. Because of their past violation and comments like yours, several additional and more stringent requirements have been added to the agreed order requirements. This includes a 200 foot application buffer from the property mentioned in this comment, as well as the prohibition of liquid application of biosolids on fields the adjacent fields, BR-13 and BR-14.

Comment I-56-2

Secondly, I would like to address the fact that Ecology is not required to directly notify by mail neighbors adjacent to any of the sites. Nor neighbors that live along the tanker access roads, leading to the sites, that this important permitting process was ongoing. I was very upset to discover that the only notification required is publication in the back of a local newspaper under the public notice the section, which very few people read. And the posting of hard to see small print signs, every 1 quarter a mile along the site property perimeters. Commuters leaving in the dark and coming home in the dark, the homebound elderly and infirm and this year, pandemic isolated neighbors did not know of this important process that could dramatically impact their health, quality of life, enjoyment of their home and its property values. In addition the only contact list, which does not have to include adjacent neighbors, is maintained, I believe by Fire Mountain Farms. And they are given the job of contacting the people on this list. This conflict of interest feels to me like giving the fox the job of notifying the hens that they will be on the dinner menu. We are requesting that ecology exceed the minimum notice requirements by 1. Maintaining the contact list in house, which could be as simple as a spreadsheet and mailing simply to resident, rather than individual people. And 2 contact by mail, all adjacent neighbors, and those living along tanker routes within 2 miles of the sites regarding any permitting processes or decisions. If budget restrictions make this difficult, I am sure volunteers would be willing to assist Ecology and creating this list and handling the mailings Thank you for your time.

Response to I-56-2

Please refer to the response provided for a similar comment you provided in comment I-32-8.

I-57: Carolyn Dolan

Comment I-57-1

Hi, this is Carolyn Dolan. I reside at 432 Burnt Ridge Road Onalaska. I have 3 points I'd like to document. Number 1, Fire Mountain Farms has broken our trust from its past history and patterns of biosolids management. We have no reason to believe this time will be any different.

Permits are only as good as the applicant's willingness to comply. We believe the Department of Ecology does not have the time or energy to dedicate enough monitoring resources to ensure the health and safety of the surrounding community. And from what I understand, that is the mission of the Department of Ecology. If this permit is granted Fire Mountain Farms should provide bimonthly monitoring of the wells and soils of their property and the neighboring wells and soils at Fire Mountain Farms expense. WAC 173-308-150(3) allows for greater frequency when appropriate based on site, suitability and if applicator violations exists, greater frequency of this kind of testing.

Response to I-57-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes community member complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.

As long as these sites are operated in accordance with the federal rule (CFR 40 Part 503) and the state regulation (Chapter 173-308 WAC),⁵² Ecology has determined that the risk of groundwater contamination at these sites is very low and will not require monitoring of offsite wells.

Comment I-57-2

Number 2, the buffers and wetlands and creeks are and wells are inadequate, especially in the rainy months of March, April, May, and June, and considering the existence of steep slopes on some of the sites.

Response to I-57-2

Thank you for your input. There are several management practices required for these sites to prevent the conditions you are concerned about. Buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffers required for these sites exceed the minimum requirement of 33 feet in the federal rule (site location) and were increased in accordance with the Biosolids Management Guidelines for Washington State.

⁵² <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Ecology agrees that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced to the following:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

The ability to land apply biosolids between October 1st and 31st is conditional. It may only occur with approval from Ecology based on evaluation of the run-off risk listed in the Manure Spreading Advisory (MSA), upcoming weather data, and additional supporting documentation if requested by Ecology. This determination is based off data available from the National Resource Conservation Service. The MSA can be found at <https://www.wadairyplan.org/MSA>. Approval is not guaranteed.

Comment I-57-3

Number 3, a complete environmental analysis needs to be done to evaluate impact of native wild life and the analysis of contaminants of emerging concern, such as micro plastics and POV pathogens. And I believe that Fire Mountain Farms should be required to pay for those studies. That's it.

Response to I-57-3

Your comment has been noted. Please see the response provided for a similar comment you made in comment I-30-3.

A-1: Lewis County,

Comment A-1-1

On behalf of Lewis County, attached please find a comment concerning Fire Mountain Farms' proposal to land apply Class B biosolids at locations within Lewis County. The comment addresses the limits of Lewis County's regulatory authority based on its county code at the time Fire Mountain Farms began land applying biosolids in these locations. It also notes that lack of regulatory authority does not equate to lack of environmental concern about the proposal, specifically with regards to land application within Shoreline designated areas. Finally, it asks Ecology to use its regulatory and permitting authority to mitigate these environmental concerns. On the specific facts here, Ecology has the power to do so, but Lewis County does not.

Dear Ms. Greenway,

Thank you for allowing comment relating to the proposed application to apply biosolids by Fire Mountain Farms. This comment addresses concerns raised by the public - perhaps accidentally fueled by comments from Ecology staff at its recent public hearing on this application - that Lewis County should have required a permit in this matter. Lewis County did not have authority to require such a permit, as explained below. However, this is irrelevant to Ecology's authority to address or mitigate certain environmental impacts associated with the project. Ecology has such

authority and should use it appropriately to mitigate the impacts of this project, particularly with respect to protection of streams from biosolids-infused runoff.

As Ecology is aware, Lewis County lacks authority to regulate the land application biosolids as part of its general police power because Ecology preempts that field. *Dep't of Ecology v. Wahkiakum County*, 184 Wn. App. 372, 484-88 & n.7, 337 P.3d 364 (2014), rev. denied, 182 Wn.2d 1023 (2015). Therefore, the County's authority in the context of this application is limited to land use and Shoreline regulation. Land use and Shoreline regulations pose different concerns about interfering with vested or preexisting uses than Ecology's health and environment oriented new permitting process.

Earlier this year as part of the SEPA lead agency process, Lewis County determined that the use of lands described in the Class B Biosolids land application proposal is a preexisting nonconforming use under Lewis County's land use codes and Shoreline Master Program. This is because FMF has been applying either class B or class A biosolids to the land in question for a decade or more, for most of which time Lewis County treated such application as permitted without distinguishing in county code between the two classes of biosolids. As of 2018, new land applications of class B biosolids require a land use permit in rural zones and are disallowed in Shoreline jurisdiction, but preexisting nonconforming uses are permitted to continue without local permit. If FMF were to change to a different nonconforming use or expand the geographic area of this use, a permit would be required. But, Lewis County does not currently have reason to believe that FMF is doing either: to Lewis County's knowledge, FMF curtailed any new area for application that would have been in the Shoreline jurisdiction. As a result, FMF structured its application to Ecology such that no Lewis County permit would be required. We therefore have no regulatory authority to act further on the issue.

While Lewis County affirms our land use and Shoreline decision as described above, this is a legal determination. As a practical matter, Lewis County's lack of regulatory authority does not equate to having no environmental health concerns regarding the permitted application of biosolids in such areas.

Some proposed sites include significant areas mapped as Shoreline areas. Mapped shoreline jurisdictional areas expanded significantly in some areas in 2017, including the Big Hanaford unit. Both the Big Hanaford and Lincoln Creek unit areas are prone to moderate winter flooding and/or standing water. Although buffer areas are proposed, we have concerns of surface water inundation that may render the buffers inappropriate or ineffective if short-term inundation allows contaminants to enter the jurisdictional wetland areas and/or the tributary.

If FM F's application of biosolids were a new use within the Shoreline area, it would be banned because of its potential environmental impacts. It is not new under our Shoreline Master Program, and so is not banned, but nevertheless may cause environmental impacts that Ecology has the power and authority to mitigate as part of its permitting process. Ecology should not decline to consider and mitigate such impacts merely because Lewis County's land-use and Shorelines regulations apply with limited force to the proposed activity.

Response to A-1-1

In order to protect ground and surface waters, the additional and more stringent conditions require that Fire Mountain Farms only apply biosolids during seasons with low precipitation. Fire Mountain Farms must additionally use a spreading advisory tool (the Manure Spreading Advisory [<https://www.wadairyplan.org/MSA>]), which predicts the risk of runoff for the site over

time. Land application of biosolids can only proceed if the surface runoff risk is low. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units

Additionally buffer zones, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches. Application rates will be reduced on fields that have slopes greater than 15% to further protect water resources.

0-1: Twin Brooks Farm,

Comment O-1-1

To whom it may concern,

Our farm near the junction of Centralia Alpha and North Fork Rd Chehalis is organic and we want to keep it that way. We have organic farm friends on Burnt Ridge road and know they do not want sewage product that can have pathogens and contamination of heavy metals etc. spread near their land. The water run off is of importance too. Our waters are polluted and we do not like the weed and feed types of pellets Weyerhaeuser uses on timber so more potential hazardous materials are not desirable. Is there a way the sewage can be cleaned Completely of heavy metals more to ensure it is not having a bad effect on our dear land and water? Thanks for your consideration, Lorna Smith

Response to O-1-1

Thank you for bringing forward your concern. There is no current technology that completely removes heavy metals from biosolids. The EPA has conducted a risk assessment to estimate acceptable trace element loading rate limits for land application of biosolids. They evaluated 14 pathways for the transfer of trace elements from biosolids to plants, animals, humans and the environment. For each pathway, they defined a highly exposed individual who would have a higher exposure to biosolids applications than the general public. They then estimated the highest application of each trace element that would have no effect on highly exposed individuals in that pathway. The loading limit for each trace element was based on the lowest limit estimated for any of the pathways.

O-2: Chehalis River Basin Land Trust,

Comment O-2-1

I am very concerned with the sites chosen near Big Hanaford Cr and Lincoln Creek. Re SEPA pg 7-8: the baseline used is 'normal weather conditions'. But climate change is happening now and referring to experiences from past years is not adequate. Analysis of the sites under expected climate change (increased rainfall, and more rain occurrences) must be done prior to approval of the plan. But at both sites there is the possibility of flooding that will wash biosolids downstream and into the Chehalis River.

Response to O-2-1

Ecology acknowledges that the risk of groundwater contamination and surface runoff are increased during the rainy season. To protect our water resources the timeframe for when biosolids can be land applied is reduced as an additional more stringent condition for this permit. The application window for the approved sites are as follows:

- March 1 – October 31 for Burnt Ridge, Homestead, and Newaukum Prairie Units
- April 1 – October 31 for Big Hanaford and Lincoln Creek units.

Big Hanaford and Lincoln Creek have reduced application windows due to data available from the National Resource Conservation Service, which shows a significant chance of flooding still likely in March. Even though significant precipitation is not anticipated during the allowed land application window, Fire Mountain Farms must use the Manure Spreading Advisory (MSA) tool to determine the potential surface runoff risk. The risk must be low for application to proceed. The MSA can be found at <https://www.wadairyplan.org/MSA>. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the 50 feet buffer required for all other streams, lakes and irrigation ditches.

Comment O-2-2

RE SEPA pg 9-10: This application states "Erosion will not occur as a result of this project. Biosolids are soil conditioners. A short time after biosolids being applied, the soil will resemble a rich, organic top soil." This is a most positive statement, but does not address the real problem of biosolids being washed into a stream. More specific statements would include the 'short time' referenced. And a better question would describe the possible action--- Does erosion only refer to the deeper soils, not the biosolids?

Response to O-2-2

The question asked in the SEPA checklist is "Could erosion occur as a result of clearing, construction, or use?" This question is asking if erosion will occur as a result of the proposed project. There is what appears to be regular erosion occurring due to the presence of steep slopes on some of the Burnt Ridge fields. The use of biosolids has been shown to increase organic matter in the soil surface, which reduces erosion. This is because soil aggregates are less likely to break down into smaller particles that can be carried away by water or wind. Additionally, the added organic matter increases moisture retention, which also decreases soil erosion, as well as decreasing surface water runoff. The application of biosolids to the Burnt Ridge unit will not cause additional erosion.

Comment O-2-3

Re SEPA pg 11: Also, in both sites the plan is to use a 10 meter vegetated setback from surface water to avoid OR REDUCE erosion. Any erosion involving biosolids is too much. And I believe this plan will not work if the vegetation consists of grass, hay, and/or low-growing forbs. There must be a better description/requirement for the setback areas. In addition, I believe 10 meters is not adequate area to control erosion during a heavy or unique rainfall. The setback distance should be at least 25 meters.

Response to O-2-3

Buffer zones or setbacks, which are non-application areas, are used to create a barrier between water bodies and where biosolids are applied to protect water quality. Ecology had already increased the buffer distance to 50 feet for all streams, lakes and irrigation ditches as a more restrictive requirement for this project. The buffer zones to Lincoln Creek, North Hanaford Creek and Hanaford Creek have since been increased to 150 feet to prevent surface runoff of biosolids in the rare event of a flood during the application window thanks to information provided by several commenters. The areas of Hanaford Creek that have been dredged into irrigation ditches will retain the original more restrictive 50 feet buffer.

B-1: Root Cellar Farm, LLC,

Comment B-1-1

We are a small-scale, organic farm located in the watershed of one of Fire Mountain Farm (FMF)'s proposed sites for the use of biosolids. We do not agree that this proposal is in the best interest of the county, its lands, or its residents.

FMF has a past that proves they view themselves above regulation to the detriment of Lewis County. They have also taken action for decades that do not consider the community or environment. In addition, the class of biosolids they are requesting to use contain harmful pathogens. There are other ways to more safely and ethically dispose of these substances.

Allowing FMF's proposal through does nothing but pose further harm and problems to our beautiful region. Please do not allow this to go through.

Response to B-1-1

Thank you for bringing forward your concerns. Our role at Ecology is to implement laws and regulations as they are written and to work with businesses to follow the law and protect human and environmental health. We do not have unilateral authority to stop biosolids applications that fall within the law, even if a facility has had past violations. Because of their past violation, however, several additional and more stringent requirements have been added to the agreed order requirements.

Ecology uses our regulatory authority to try to ensure that permittees comply with permit conditions. However, unfortunately there are circumstances where a compliance violation occurs. When Ecology discovers permit violations, we take the appropriate steps to resolve the issue. These steps may include, but are not limited to: technical assistance, notices of correction(s), site investigations, remediation, termination of permits, monetary penalties, and more. When a permittee has had a history of compliance issues, as does Fire Mountain Farms, Ecology will provide additional oversight. Ecology takes community member complaints very seriously and they often lead to announced and unannounced site visits. Ecology staff strongly recommend that when a community member believes that they have information related to a potential violation of the permit, they report it to Ecology as soon as possible so that we can follow up.